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CENTRALIZED PROCESSING FOR THE PUBLIC LIBRARIES OF NEW YORK STATE, A SURVEY CONDUCTED FOR THE NEW YORK STATE LIBRARY.

NELSON ASSOCIATES INC., NEW YORK, N.Y.

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THIS SURVEY WAS CONDUCTED TO DETERMINE--(1) THE OPTIMUM NUMBER OF PROCESSING CENTERS FOR THE NEW YORK STATE LIBRARY SYSTEMS AND (2) THE BEST METHOD FOR DEVELOPING CATALOGS FOR THE LIBRARIES. MAJOR FINDINGS WERE--THAT CATALOGING DIFFERENCES AMONG THE SYSTEMS WERE NOT GREAT, THERE WAS A CURVILINEAR RELATIONSHIP BETWEEN THE NUMBER OF ITEMS PROCESSED IN A CENTRALIZED PROCESSING CENTER AND THE COST PER ITEM, 53.2 PERCENT OF THE TOTAL SPENT ON PROCESSING WAS SPENT BY THE SYSTEMS OUTSIDE NEW YORK CITY WITH THE CITY ACCOUNTING FOR 46.8 PERCENT, AND LIBRARIES IN NEW YORK STATE SPENT OVER $5,000,000 TO PROCESS ABOUT 2,400,000 ITEMS, FOR AN AVERAGE TOTAL COST PER ITEM IN EXCESS OF $2.08. MAJOR RECOMMENDATIONS INCLUDE--ONE CENTER FOR ALL PUBLIC LIBRARY CATALOGING AND ACQUISITIONS IN THE STATE, THREE CENTERS FOR PHYSICAL BOOK PROCESSING FOR UPSTATE LIBRARIES AND NO FURTHER CENTRALIZATION FOR PHYSICAL PROCESSING IN NEW YORK CITY, THE DEVELOPMENT OF A UNION CATALOG IN BOOK FORM FOR THE LARGEST LIBRARIES, A SERIES OF NINE REGIONAL BOOK CATALOGS FOR MEDIUM-SIZED LIBRARIES, PROVISION OF CATALOG CARDS BY THE STATEWIDE CATALOGING CENTER FOR THE REMAINING LIBRARIES, AND GREATER USE OF COMPUTERS IN THESE ACTIVITIES. IT IS CONCLUDED THAT $880,000 WOULD BE SAVED IF THE NETWORK IS EFFECTED. APPENDIXES GIVE INFORMATION ON PRESENT CENTRALIZED PROCESSING OPERATIONS, METHODOLOGY USED IN THE SURVEY ANALYSES, AND TECHNICAL DETAILS ON THE RECOMMENDED PROCESSING SYSTEM. A SUMMARY OF THIS REPORT APPEARS IN "BOOKMARK," MAY, 1966, PAGES 295-296. (JB)

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CENTRALIZED PROCESSING FOR THE PUBLIC LIBRARIES OF NEW YORK STATE

A Survey Conducted for
The New York State Library

by
Nelson Associates, Incorporated

in collaboration with
The Theodore Stein Company

This report is submitted solely for the information and benefit of the client to whom it is addressed.

NELSON ASSOCIATES, INCORPORATED • 845 THIRD AVENUE, NEW YORK, N.Y. 10022 • 212 HA 1-3110

March 4, 1966

Miss Jean L. Connor, Director
Division of Library Extension
The New York State Library
Albany, New York

Dear Miss Connor:

We are pleased to submit herewith our report on centralized processing activities by the 22 public library systems of the state of New York, and our recommendations for the further development in the state of this essential element of library service.

The research conducted for this study indicates that the library system concept as it has developed in New York State has made a significant contribution to the continuing improvement of public library service in the state. The recommendations made in this report are designed to further this improvement in the areas studied.

We hope you, your associates, and librarians throughout the state, will find this report useful as you work to bring increasingly effective library service to the people you serve. We stand ready to assist in any way you may think appropriate the implementation of all or parts of the recommendations made in this report.

Yours very truly,

NELSON ASSOCIATES, INCORPORATED

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TABLE OF CONTENTS

Page

Introduction i

SUMMARY 1

RECOMMENDATIONS AND CONCLUSIONS 1

MAJOR FINDINGS 3

TEXT

PROCEDURES, DEFINITIONS AND CRITERIA 5

CATALOGING AND CATALOG PRODUCTION AND MAINTENANCE 7

PREPARATION AND DELIVERY 19

ACQUISITIONS 21

PROPOSED COMPUTER-SYSTEM OPERATION 23

SYSTEM STRUCTURE AND WORK FLOW 27

COSTS AND SAVINGS OF RECOMMENDED NETWORK 29

COMMERCIAL PROCESSING SERVICES 31

IMPLEMENTATION 32

APPENDIXES

Appendix A PRESENT CENTRALIZED PROCESSING OPERATIONS IN SYSTEMS 1

Processing Activities Survey 1
Field Visits to Sample Systems 10
Cost Questionnaire 11
Cataloging Considerations 19
  Unique Titles Cataloged 19
  Upstate Systems' Cataloging Differences 24

Page

Exhibit I. System Processing Activities Survey Questionnaire 30
Exhibit II. Cost of Centralized Processing for Systems (form) 40
Exhibit III. Adult Titles List 48
Exhibit IV. Juvenile Titles List 50

Appendix B MEMBER LIBRARIES AT PRESENT 1

General Attitudes 1
Questionnaire Results 1
Member Library Visits 13
Member Library Processing Costs in 1964 14

Exhibit I. Member Library Questionnaire 20

Appendix C RESULTS OF OTHER RESEARCH 1

Section 1. State Library Considerations 1
Section 2. Non-Member Libraries 3
Section 3. Commercial Processors 5

Exhibit I. Sample of Letter Sent to Commercial Processing Firms 9

Appendix D PROCESSING SYSTEM CONSIDERATIONS 1

Section 1. Acquisition, Cataloging, Preparation and Delivery 1

Acquisition 1
Cataloging 3
Preparation 5
Delivery 7

Page

Section 2. Catalogs 10

Book Catalogs Versus Card Catalogs 10
Cost of Book Catalog Production 11
Statewide Book Catalog Variations 12
Book Catalog Design and Organization 14
  Interval Between Catalog Supplements 15
  Form of the Supplement 15
  Page Density of Entries in the Book Catalog 15
  Size of the Main Catalog 17
  Methods of Grouping Libraries in a Union Catalog 18
Holdings Information in Book Catalogs 19
  Limitation of Symbols 19
  Changes of Holdings Information in the Main Catalog 20
  Showing Holdings at Only One Entry 21
  Method of Reporting Library Holdings 22

Exhibit I. Statistical Analysis of Library Processing Costs 23

Introduction 23
Cost Functions 23
Statistical Analysis of Cost Functions 25
Measures of Statistical Significance 27
Summary of Statistical Findings 27
Determining the Optimum Size of Processing Centers 28
General Comment 29
Conclusion 29

Exhibit II. Mail Delivery Test 30

Exhibit III. Book Catalog Calculations 33

Optimum Recumulation Intervals 33
Explanation of Printing Cost Tables for Constant Volume Catalogs 34

Page

Appendix E DESCRIPTION OF MACHINE SYSTEM 1

Section 1. Functions To Be Carried Out by the System 1

The Item Master File 1
Entry of New Titles into the System 1
  Library of Congress Copy 1
  Books Received on Standing Order 1
  Lists Prepared by Selection Specialists 2
  Special Orders 2
  Preparation of Pre-Selection Lists and Multiple Requisition Forms 2
  Processing Selection Reports and Preparation of Selection Lists 3
  Supplier Assignment 3
  Processing Requisitions and Preparing Orders to Suppliers 4
  Preparation of Process Control Sheets and Labels for Processing Centers 5
  Processing Suppliers' Invoices 6
  Making Payment to Suppliers 6
  Maintenance of Library Receivables File 7
  Serial Subscription Renewal 7
  Serials Check-in 8
  Catalog Work Sheets 8
  Proofreading 9
  Administrative Reports 9
  Catalog Outputs 9
  Union Holdings List 10
  Non-Book Materials 10
  Statistics 10

Section 2. System Flow Chart 11

Input, Transcribe and Sort 11
Update, Output and Sort 12
Catalog 13
Process and List 14

  Flow Chart E-1 16
  Flow Chart E-2 17

Page

Section 3. Equipment Specifications 18

Relation of Equipment Specifications to System Flow Chart 18
Equipment Specifications for a Statewide System 19

Section 4. Aspects of the Recommended System 21

Functions Carried Out by Clerical and Professional Staff 21
Use of Character Reader as an Input Device 23
Special Features of the System 24

Appendix F PROJECTED COSTS OF THE RECOMMENDED PLAN 1

Section 1. Operating Costs 1

Acquisitions 2
Cataloging 3
Preparation 4
Delivery 5
Catalog Material Production and Catalog Maintenance 6
Comparative Overall Costs 7

Section 2. Capital Costs 9

Data Processing Installation Costs 9

INTRODUCTION

Since the late '40's, encouraged by sympathetic legislation, the public libraries of New York State have been in process of organization into systems. Currently about 680 of the some 720 public libraries in New York State are organized into 22 systems, whereby member libraries are enabled to obtain a variety of services by means of their cooperative endeavors. One of the centralized services that has been developed in most of the systems is the processing of library materials. As a result of this centralization much of the work of cataloging and book preparation has been undertaken by the systems for member libraries.

Having achieved a substantial degree of success with these efforts the question has arisen whether any further degree of centralization appears to be wise and practical at the present stage of development. The present study is designed to answer two fundamental questions:

1. What is the optimum number of processing centers required to meet the needs of the public library systems of the state?

2. What is the best method for the development of catalogs for the member libraries of the systems? This question specifically includes exploration of the feasibility of unified production of book catalogs.

The present report comprises first a summary of the conclusions, findings and recommendations of the study. The body of the report in turn discusses and explains these outcomes in the light of the research conducted. The appendixes present in some detail the methodology of various analyses and the details of data obtained in connection with the study and also provide certain technical information on the processing system recommended.

This survey was conducted simultaneously with two others. One, also undertaken for the state library, investigates the possibilities of processing of materials for school and college libraries through the centralized operations of the public library systems.[1] As necessary for an understanding of the statewide situation the research, results and recommendations contained in that report are referred to herein. The second, undertaken for the Brooklyn, New York and Queens Borough public library systems, examines the feasibility of further centralization of processing operations in New York City.[2] As will be seen, some information on the operations of the three New York City systems is contained in this report, but generally only such information as was also gathered in the course of this study for the 18 systems outside New York City. General recommendations are also made in this report as to how the three New York City systems might fit into a proposed statewide plan of centralized processing for all the state's public library systems.

Working closely with the staff of Nelson Associates on this survey were: The Theodore Stein Company, which provided expert counsel on the data processing aspects of the study; Dr. Maurice Tauber, Melvil Dewey Professor of Library Science, School of Library Service, Columbia University; Dr. Richard P. Brief, Assistant Professor of Business Statistics, New York University; and Dr. Seoud Matta, a professional librarian who assisted particularly on questions relating to cataloging practices. Acknowledgment is also gratefully given for the assistance of the advisory committee, members of which are listed on the following page; to the staff of the state library and particularly to its distinguished retiring chief, S. Gilbert Prentiss; and to personnel of public libraries and library systems throughout the state for their invaluable and generous cooperation.

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[1] Feasibility of School and College Library Processing Through Public Library Systems in New York State, Nelson Associates, Inc., for the New York State Library, 1966.

[2] The Feasibility of Further Centralizing the Technical Processing Operations of the Public Libraries of New York City, Nelson Associates, Inc., for the Brooklyn Public Library, the New York Public Library and the Queens Borough Public Library, 1966.

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SUMMARY

The following pages contain in brief compass the major recommendations and conclusions of the survey as well as the most important findings. Substantiation of these summary statements is to be found in the appropriate sections of the text and the appendixes.

RECOMMENDATIONS AND CONCLUSIONS

The two central questions of the survey and the answers obtained thereto are summarized below.

I. What is the optimum number of processing centers which should be operated for the public library systems of the state?

1. For cataloging and acquisitions, one center is proposed to meet all the public library needs of the state, including those of New York City.

2. For physical processing, three centers are proposed to meet upstate needs; for New York City, it is suggested that physical processing not be further centralized for the near future.

II. What is the best method for the development of catalogs for the member libraries of the systems?

3. For the six or seven largest libraries in the state (Brooklyn, Queens, New York Circulation Department, Rochester, Syracuse, Buffalo and portions of the State Library collection are specifically suggested) a union catalog in book form is proposed, marked to show the holdings of these largest libraries and designed to supplant their card catalogs. Such a catalog is also seen as a finding tool for librarians and patrons statewide.

4. For approximately 180 of the next largest libraries in the state, nine regional catalogs in book form

are proposed, each marked to show the holdings of the 20 largest libraries in the region, and designed to supplant their card catalogs.

5. For all libraries whose holdings are not shown in the ten catalogs referred to above, it is proposed that catalog cards be produced by the statewide cataloging center for filing in presently maintained card catalogs, except in instances where no catalogs are required.

III. In addition:

6. Computers should be used extensively in acquisition, catalog production and for producing certain materials for physical preparation.

7. The proposed processing network can be expected to produce savings annually of approximately $880,000 on a statewide basis.

8. In addition, to the extent that member libraries accept network services as substitutes for processing activities they now perform, further savings can be realized.

9. It is not economic to produce for each of the systems a union book catalog showing members' holdings.

10. The reorganized processing and cataloging arrangements should at first serve only the public libraries of the state. Only after the system is operating smoothly should consideration be given to accepting the added volume and other complications implicit in serving other constituencies such as the school libraries.

11. A period of about three years will be required for necessary system design and programming. Subsequently it is estimated that a two-year period of testing and phased implementation will be required before a smoothly operating statewide program can be achieved.

12. If a consensus exists that the recommended program should be pursued then it becomes urgent that consideration be given to those issues which must be settled before firm action can be taken. These issues include organization structure, financing, location, and catalog conversion.

13. Analysis of costs and benefits reveals that the New York City systems and the upstate libraries have much to gain from a program which includes both.

MAJOR FINDINGS

1. Differences in cataloging methods among systems are not of themselves great enough to preclude a single cataloging center serving all 22 systems.

2. There appears to be a curvilinear relationship between the number of items processed in a centralized processing operation and the cost per item of doing the processing. The most uneconomic volume appears to be about 100,000 items annually. As the volume decreases from that figure or increases from it, at least up to 400,000 items annually, the cost per item tends to decrease.

3. On the whole, member libraries of the public library systems appear to be well pleased with the centralized processing services they are now getting from the systems.

4. The complaint most often made by member libraries about the processing services is that material ordered through the systems is not delivered as fast as it should be. About one-fourth of the upstate member libraries appear to have a complaint concerning this aspect of system centralized processing.

5. Altogether in 1964-1964/65[1] the 22 systems cataloged or had cataloged for them about 262,000 titles of materials new to the individual systems. It is estimated that of these 262,000 only some 45,000 represented unique titles.

6. In 1964-1964/65 the 22 public library systems of the state spent about $3,630,000 to process 2,046,373 items. The average system processing cost per item was $1.78.

7. Of the total spent on processing about $1,930,000 or 53.2% was spent by the 19 systems outside New York City for the processing of 1,040,603 items, or 50.9% of the total items processed by the public library systems in the state in 1964. The average processing cost per item for these systems was $1.86.

8. The three New York City systems spent 46.8% or about $1,700,000 of the total expended on processing by the systems. These three systems handled 1,005,770 items or 49.1% of the total items processed by the systems of the state in 1964-1964/65. The average processing cost per item for these systems was $1.69.

9. In 1964 it is estimated that member libraries themselves spent from $950,000 to $1,200,000 on the processing of materials. This amount is in addition to the $3,630,000 referred to in Finding 6.

10. Including items processed locally and local costs of filing cards supplied by systems, member libraries and systems thus spent over $5,000,000 to process about 2,400,000 items, for an average total cost per item in excess of $2.08.

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[1] Figures for upstate systems are for calendar year 1964; New York City systems' are for the fiscal year 1964-65.

CENTRALIZED PROCESSING FOR THE PUBLIC LIBRARIES OF NEW YORK STATE

This report describes the results of a survey of the feasibility of further centralizing technical processing services for the public libraries of New York State. The following pages include first a description of certain crucial procedures, definitions and criteria. The recommended program is then described in terms of the basic processing elements— cataloging and catalog production and maintenance; preparation and delivery; and acquisitions. There is next a description of the proposed computer-system operation. This is followed by a diagram of the statewide system structure and work flow. Then a summary of operating costs and savings is provided. Commercial processing services are then discussed. Finally, questions of implementation are discussed. The appendixes provide more detailed information on a number of subjects dealt with in summary fashion in the body of the report.

PROCEDURE, DEFINITIONS AND CRITERIA

In a study of this complexity it was essential to subdivide the work into a number of distinct tasks. These elements of the work program then provided essential facts or conclusions on which other aspects of the study impinged. The most important of these distinct survey tasks included:

- analysis of the steps in technical processing into major elements, and defining these elements;
- establishment of criteria for comparing alternative processing possibilities with another;
- obtaining detailed information on the present processing operations and costs of the systems in the state;
- obtaining from member libraries of selected systems information on attitudes, costs, needs, etc. in relation to processing;

- estimating total future volume of processing statewide;
- estimating the total current cost and volume of processing statewide;
- assessing the interest of non-member libraries in obtaining centralized processing services;
- estimating the extent and characteristics of variations in catalog entry rules and classifications;
- analyzing the relationship of cost to volume in existing system processing centers;
- obtaining information on services and costs of commercial processing firms.

Definitions of the major elements in the processing cycle are, of course, essential to the collection of meaningful data and to the comparison of alternative solutions. The processing activities studied include those in the processing cycle starting with the physical production of selection lists (but not including the efforts involved in choosing what materials are to be listed) through the cycle to the time the materials are delivered to the member library or branch ready for shelving. For the purposes of analysis the activities are divided into four parts and distinguished as follows:

> Acquisition: from physical production of selection lists through checking in of materials received. Includes, in addition to above, ordering, order searching, maintenance of acquisition files, initial and follow-up communications with vendors, any billing involved, and any necessary record-keeping.
>
> Cataloging and Catalog Maintenance: from searching for catalog information through production of catalog cards and book cards and pockets. Includes descriptive cataloging, subject heading and classification, the filing and maintenance of catalogs and files necessary for the operation of centralized processing, and any other record-keeping necessary for the above activities.

Preparation: from the assembling of book pockets and catalog card sets through the jacketing of materials. Includes pasting in of book pockets, property stamping, reinforcing of paperbacks, and any record-keeping necessary for the above activities.

Delivery: from readying of materials for shipping through delivery to consignees. Includes wrapping where necessary and any necessary record-keeping for these activities.

It should be noted that binding and mending are not included in the scope of the analysis.

While the chronological order of the processing cycle is as given above, the logical order for purposes of analysis appears to be cataloging, preparation and delivery, and acquisition; the latter is the order in which they are treated later in this chapter.

Three criteria have been applied to the comparison of alternative processing solutions— speed, cost and quality. Each factor is sufficiently important that no proposal can be entertained which is markedly deficient on any one count. As the alternatives are discussed later some are discarded because they are too slow or offer risks of being so, others because they are too costly and still others because of the inferiority of the product. Considerations of quality are complex; they include such diverse questions as: How much of the processing output will be left to the member libraries to do themselves? Will the catalog produced be too complex for the patron? Will the quality of cataloging meet professional standards? With respect to costs, the chief issues are whether services comparable to those now provided can be obtained more economically by further centralization, and whether there are improvements in service obtainable without cost increases. Speed is critical at every stage in the process since the total time elapsing from ordering to delivery is what matters and bottlenecks in cataloging or preparation are just as unacceptable as delays in order processing or delivery.

CATALOGING AND CATALOG PRODUCTION AND MAINTENANCE

A single cataloging center is recommended to meet the needs of the public libraries of the state.

The desirability of any further centralization of cataloging depends upon three basic considerations: the amount of duplication of effort in cataloging now occurring; the extent and seriousness of differences in cataloging practices; and the question of the economic size of a cataloging center.

Duplication of Cataloging Effort. In 1964 the 22 public library systems cataloged a total of about 262,000 titles. A matching of sample titles indicates that only about 45,000 of these titles were unique (see Appendix A). Thus it appears that five to six times more cataloging is being done in the public library systems of the state than need be if differences in cataloging practices could be resolved.

Differences in Cataloging Practices. Perhaps the most important fact to be remembered concerning these differences is that system centralization has itself required the acceptance of uniform cataloging practices. It is perhaps significant that member libraries queried are generally of the opinion that this has resulted in an improvement over previous practice (see Appendix B, page 30). A study of the cataloging practices of the present systems indicates that, though there would, of course, be problems involved in working out a unified cataloging approach which could be followed by all, it appears that such an approach could be achieved by the cooperation of the various systems over a period of time. Research in connection with the study of the three New York City library systems showed that responsible officials of these three largest systems in the state expected that the working out of a common set of cataloging practices for their systems could be achieved. It seems reasonable to expect that if there are grounds for believing that three systems of such size and complexity can agree on common cataloging practices the other systems of the state could probably also do so.

A special problem is presented by the Buffalo and Erie County Public Library which, alone among the 22 systems of the state, uses Library of Congress classification instead of Dewey. Accommodating LC classification would require additional work, but much of the professional cataloging effort involved would not have to be duplicated. The estimate of costs for the statewide cataloging system referred to later includes an allowance for the expected added expense.

To some extent existing differences in cataloging practice may reflect differences in the experience and ability of catalogers.

If there were only one cataloging center for the public library systems of the state, there would be the opportunity to encourage a uniformly high level of cataloging content through the employment of the most highly qualified professionals to perform the function.

Economic Size. It is estimated that current system cataloging efforts statewide cost about $1,330,000. Largely because of the elimination of duplicate effort, the proposed single center would spend an estimated $410,000 on cataloging (see Appendix D). It seems clear that two or more cataloging centers would be substantially more expensive than one because of the duplication of effort or, alternatively, because of the substantial communication cost of avoiding such duplication.

Furthermore there does not appear to be any inherent reason to believe that a center cataloging 45,000 titles would need to be larger than the optimum economic size. Even assuming that there is no increase in the availability of Library of Congress copy, whether on magnetic tape or in proof sheet form, the center would not need to employ more than 11 to 13 catalogers. If, on the other hand, the percentage of titles that are cataloged in the statewide center from available LC copy is substantially greater than the current experience of large public library systems, fewer catalogers would be required to handle the center's cataloging workload. Thus, it can be seen that the cataloging center would not be large.

Nevertheless, a study of the information furnished by the systems in answer to the System Processing Activities Survey questionnaire (see Appendix A) indicates that more than 90% of the backlogged material in the various systems is held up in cataloging. Should a statewide cataloging center develop such a backlog it might be disastrous. The solution, of course, is easier to enunciate than to achieve: efficient administration and more than enough personnel to do the work. Since the amount of the savings to be realized is substantial, it would be possible to increase the personnel budget of the cataloging center if necessary, while still reaping great benefits. The budget figure mentioned above is premised on an average annual workload of 3,750 titles per cataloger. (This workload includes an annual average of 1,690 titles requiring "original" cataloging and an average of 2,060 titles for which LC cataloging copy is available, in accordance with the finding that the New York City library systems have LC copy on hand for about 55% of their titles cataloged.) If this workload were to be reduced by 20% to prevent possible backlogs, the increased cost of additional catalogers would be about $35,000 (including fringe benefits and additional overhead expenses).

In short, duplication and reduplication of cataloging effort exists to such a marked degree at present that savings from centralization amply justify a well-staffed center capable of producing the highest quality of professional work in timely fashion.

Recommended catalogs:

For the six or seven largest libraries in the state, a union catalog in book form is proposed, marked to show the holdings of these largest libraries and designed to supplant their card catalogs.

For approximately 180 of the next largest libraries in the state, nine regional catalogs in book form are proposed, each marked to show the holdings of the 20 largest libraries in the region, and designed to supplant their card catalogs.

For all libraries whose holdings are not shown in the ten catalogs referred to above, it is proposed that catalog cards be produced by the statewide cataloging center for filing in presently maintained card catalogs, except in instances where no catalogs are required.

These recommendations are the consequence of a small number of pervasive conclusions. First, the book catalog is better suited to the needs of the larger public libraries of New York State than the card catalog. The advantages and disadvantages of the book catalog are discussed in Appendix D, Section 2. Second, computers are an essential tool in the efficient production of book catalogs; but while book catalogs imply the use of computers the reverse is not true— computers can also efficiently produce cards for card catalogs if there are good reasons why that should be done. While the recommendations above do not mention computers it will be apparent as the implications of the proposals are set forth that the basic suggestions as made in this report, with the exception of the centralization of the cataloging effort itself, are dependent upon the computer for their efficient performances.

Third, the needs of libraries of different sizes vary considerably; a plan encompassing them all should seek to achieve the advantages of uniformity and centralization where appropriate and at the same time permit a wide variation in application to meet different situations.

There are in fact a large number of possible catalog solutions, even assuming centralized cataloging. A number of the alternatives are discussed in Appendix D. The paragraphs that follow are devoted to a further explanation of the recommended catalogs.

It is proposed that a book catalog be produced showing all titles acquired anywhere in the state since the start of the system and cataloged at the center. The book catalog will be in two parts. There will be a main catalog issued every 15 months and there will be a supplement issued every month showing new titles acquired. The monthly supplements will be cumulative, that is, the supplement for any month after issuance of the last main catalog will show everything that has been acquired since that main catalog was issued. Holdings will be marked for the largest public libraries in the state. It is proposed at the least that holdings be shown for Brooklyn, Queens, New York Circulation Department, Buffalo, Rochester, Syracuse and portions of the state library collection. In the case of a library with branches, such as Buffalo, a holdings mark would mean that the book is held either at the Buffalo central library or in one or more of its branches.

Because the main catalog represents a total reprinting of everything acquired in a period stretching many years back, the cost of the photo offset and printing process that takes place after the master copy is printed on the computer is very high, and every effort must be made to reduce this cost. The proposed solution is that for each item listed in the catalog only the main entry be shown in full. Each of the added entries will be condensed. With this scheme it is quite feasible to achieve a printing density of 30 entries per page for main entries and 60 entries per page for added entries. With careful attention to format and typography even higher densities are achievable.

Another recommendation aimed at reducing the cost of catalog printing is that the main catalog does not continue indefinitely to represent a total cumulation of all titles acquired since the system started. It is obvious that after a period of many years this catalog will be extremely large and the printing cost will be prohibitively high. It is proposed that continuous cumulation in the main catalog proceed until the main catalog represents about ten years of acquisitions. The main catalog produced at this point will be saved. From that point on at each reprinting of the main catalog a sufficient quantity of the oldest entries will be dropped to compensate for the volume of new material added. The entries dropped will no longer be available in the main catalog but they will remain in the main catalogs previously printed which will be available for reference. Thus the size of the catalog will remain constant at about ten years of acquisitions. The catalog in the second ten-year period will overlap the first ten-year catalog. The first issue of the second ten-year period catalog will have about 90% overlap. As subsequent issues are produced the overlap will be less and less. After about 20 years there will be no more overlap, except for special entries discussed below, and this second ten-year period catalog will be saved and the third ten-year period will be started.

The reasoning behind this recommendation is that the current ten-year catalog will at any time show everything acquired in the past ten years and should satisfy most needs. Thus for most purposes there will only be two catalogs in which to look, the main catalog and the supplement. For some purposes it may be necessary to look back into a previous ten-year cumulation or even one step beyond that. To reduce the number of places to look it is further proposed that after 20 years a total recumulation of the two ten-year catalogs that have been saved be accomplished.

Some important entries should not be dropped when the main catalog is recumulated but should be continued indefinitely. There will be provisions in the machine system for designating these entries.

For the large majority of uses the condensed entries in the catalog will provide sufficient information, and reference to the full description main entry will not be needed. To facilitate the second look-up in case a reference to the full description is needed the page and line number of the full entry will be provided at every condensed entry.

Many variations on the ten-year cumulation scheme proposed here are possible and these are discussed in Appendix D. An obvious variation is simply to increase the time span of cumulation from ten to 15 or 20 years. An improvement can be obtained at rather moderate costs by using a 20-year cumulation period and printing all entries more than ten years old in extremely condensed form as single line entries. This would cost somewhat more than the scheme proposed here but not nearly as much more as a 20-year catalog without the addition of condensation. However for cost evaluation in this report, the catalog as specified above is used.

For items listed in the supplement, holdings information will always be accurate and up to date. Holdings indications in the main catalog can be out of date particularly in the case of the latest items entered into the catalog. The main catalog will not show the holdings of libraries which have acquired the item since the last issue of the main catalog. No attempt to compensate for this will be made in materials for distribution to the public. However, for staff use, each library whose holdings are marked in the catalog will receive a periodic listing of changes to its holdings in the latest main catalog. The staff will be expected to keep a master copy of the main catalog and to manually mark holdings changes. However, this marking task should be very small; it is not done at all for titles represented only in the supplement. Probably it will only be of substantial volume at the beginning of a new cumulation period when the library is acquiring some titles which were acquired elsewhere in the state at the end of the previous cumulation period. Other holdings information provided for staff use will be discussed below.

If a title is totally deleted from a library's collection, then that title will not be removed from the main catalog until the next main catalog cumulation. As with addition of titles this change will be made by the library staff on its master copy. This should be a minor problem, however, and there should be no difficulty in timing most deletions to coincide with the issuance of the next main catalog.

It is extremely important that new items be carefully edited before the issuance of a new main catalog. Whereas errors in the supplement can be corrected the following month, if an error finds its way into the main catalog it cannot be corrected for 15 months. Of course, errata sheets can be issued as attachments to the main catalog but this is a clumsy procedure.

To minimize printing costs it is proposed that holdings information in the catalog be shown only at the main entry.

Regional Book Catalogs

To supplement the statewide book catalog it is proposed that libraries throughout the state be grouped into regions, which may or may not coincide with current groupings into systems. For each such grouping of libraries a union book catalog will be issued. In the case of Rochester and Syracuse their holdings will be marked in the regional catalogs as well as in the statewide catalog. (It is expected that in the three New York City systems, Buffalo and the State Library, users will be able to use the statewide catalogs without inconvenience since there should be few titles in the statewide catalog which will not be held in these five large libraries.) In each of these regional catalogs the 20 largest libraries in the region will have their holdings marked. It is estimated that nine such catalogs will be produced. Thus, including the statewide catalog there will be ten catalogs showing the holdings of nearly 200 libraries. The format and cumulation scheme for these catalogs will be the same as that for the statewide catalog.

Costs for one possible configuration of regional catalogs are displayed in Table D-5 in Appendix D. The regional catalogs assumed for Table D-5, in the order in which they are printed in the table, cover the following systems:

Region 1 - Nassau
Region 2 - Suffolk
Region 3 - Westchester
Region 4 - Chautauqua-Cattaraugus, contract libraries of Buffalo and Erie County and Nioga
Region 5 - Pioneer, Chemung-Southern Tier and Finger Lakes
Region 6 - Mid-York and Southern Adirondack
Region 7 - Clinton-Essex-Franklin, North Country and Onondaga
Region 8 - Mid-Hudson and Ramapo Catskill
Region 9 - Four County, Upper Hudson and Mohawk Valley

Catalog Cards for Smaller Libraries

Those libraries whose holdings are not marked in any catalog will be provided with catalog cards which they can use to maintain their own card catalogs. However, as discussed below there is the possibility that a library whose holdings are not marked may still not find it necessary to maintain a card catalog.

Other Features of the Proposed System

Shelf List Cards. Every library will be provided with one shelf-list card at the time it acquires a new title and will be expected to maintain a card shelf-list. Notice of deletion of a title will be given to the catalog center by return of the shelf-list card. These cards can be entered via the character scanner.

Special Materials for Staff Use. In addition to the holdings change notices in the main catalog which were described above, a total holdings list showing statewide holdings for each title will be provided and will be kept at the state center and at other locations throughout the state. Similar lists by region or system can be kept. These listings would not be printed in large volume for public distribution and the printing costs should be moderate; the number of pages should not be great. The only information given will be title, author, an identifying item number and the holding symbols. The sequence will be alphabetic by title or by author if preferred. In addition a union shelf list will be prepared for use at the cataloging center.

Use of the Book Catalogs ; The Replacement of Book Catalogs by Card Catalogs. The concept of a union book catalog provides a valuable new service not available now. The statewide union catalog should be a valuable bibliographic tool for identifying titles bearing on certain subjects regardless of the location of the books. In addition the statewide and regional catalogs supplemented by the holdings information provide location devices never available before and should have an important bearing on interlibrary loan procedures. However, the use of union book catalogs is not proposed only because of the additional service they provide. If book catalogs are to be used, then their use in union form is an economic necessity because of the high cost of printing these catalogs; it becomes necessary to accept both the advantages and disadvantages of union catalogs and to make the best provision for using them not only in a situation where the union catalog is the most appropriate and valuable tool but also in the situation where the catalog of a specific library might be more convenient.

If one could have union book catalogs and individual library catalogs for each library that would be the ideal solution. However, the total cost would be too great. Thus the proposals put forth here are made on the assumption that the union book catalog will not be a supplement to present card catalogs, but that in a large number of libraries, although not all, they will replace the card catalogs. Thus the important question arises as to how these book catalogs will be used and how satisfactory they will be as replacements for card catalogs in individual libraries. Three factors must be examined in considering the use of a union catalog as the local catalog for a specific library. They are:

1. The fact that the union catalog will contain much more material than the library holds makes it somewhat less convenient to use if the user is interested only in the library's holdings. This is obviously a much greater problem in the case of a small library represented in a union catalog along with much larger libraries.

2. After entries are located it is somewhat time consuming and inconvenient to check holdings markings to see if the item is held in the specific library. This is particularly the case in the catalog proposed here where holdings are marked only on the main entry.

3. In the scheme proposed here many libraries will not have their holdings marked in book catalogs. Provision for furnishing these libraries with catalog cards is made. However, it is not inconceivable that many of these libraries will still be able to supplant their card catalogs with a book catalog by using the book catalog in conjunction with the library shelf list for holdings information. This of course is even less convenient than use of a specific card catalog when only holdings for a specific library are of interest. This would have to be justified by the value of the additional information furnished by other library holdings, the improved ease of use afforded by the book form, and the fact that in many instances specific holdings information is not needed.

A provisional judgment is offered concerning the way in which these factors will affect the use of the book form catalogs proposed here, as follows:

The libraries whose holdings are marked in a book catalog should be able to use the book catalog not only as a union finding tool but as the library's own catalog. Only the largest libraries represented by each grouping would be marked. Thus the excess of titles over that which the library does hold should not be so great as to make the search procedure cumbersome. The number of holdings marks is not so great as to cause any serious difficulties in readability. Although a maximum of 20 marks is possible the number of marks actually present would generally be less than this.

It seems quite likely that a number of libraries would choose to use the book catalog to replace the card catalog even if their holdings are not marked in the book catalog. If the other libraries represented in the catalog along with the specific library in question have good loan arrangements with the specific library then from the patron's point of view it may not make much difference whether the book is held at his library or not. The procedure followed might be (1) the patron finds something in the catalog; (2) he goes to the shelves to see if it is there; (3) if it is not there he asks for it at the desk; (4) either it is out on circulation or it is held at another library (the patron does not really care which is the case so long as the library will get it for him); (5) the librarian, by use of a shelf list and/or the union holdings list printed for staff use, finds out where the book is obtainable. If the usage described here represents the majority of cases then it may be satisfactory in some libraries to use the book catalog combined with the library shelf list and the union holdings list to replace a card catalog, even though the library's holdings are not marked in the book catalog.

In the case of a very small library, however, this procedure might not be very satisfactory. The holdings of this library might be so insignificant compared to the total bulk of the union catalog that the use of the catalog would become an inconvenience. In such a case the library would have to depend upon cards furnished by the cataloging center and maintain a card catalog. However, the question is raised here whether even this is necessary. At such a small library it might well be that a catalog of the library's own holdings is really not important. The user probably will work primarily by going to the appropriate section of the shelves to look at books. A subject guide to the Dewey decimal system would probably be perfectly satisfactory for these purposes. The time that the user has real need for a catalog is probably when the catalog shows holdings beyond his own library. Thus it is not inconceivable that a small library could satisfactorily abandon its card catalog by using a subject index to the classification system for local purposes and by having available one of the regional union catalogs for reference problems of such a nature that the user will have interest in holdings beyond his own library. This consideration is not critical to the evaluation of the system under discussion but it is suggested as a definite possibility which should be explored.

A question may arise as to why a distinction is made between branches of a large library and any other group of small libraries. It is proposed here for such libraries as Buffalo and New York City that all branches use the catalog that shows holdings of the library as a whole. Individual branch holdings will not be marked; thus the arguments given above against the use of a very large catalog at a small library might seem applicable. However, there is the difference that in a large library with branches the inter-branch loan arrangements are quite strong, communication is relatively good and distances between branches are relatively small. Each branch may properly regard itself as an outlet to the holdings of the entire consolidated system.

Arguments have been advanced to the effect that it may not be necessary to go to the trouble of showing the current holdings at all in union catalogs but that the method of operation suggested here as satisfactory for a library with many branches is equally convenient for other groupings of libraries providing that strong interloan provisions can be made. There may be some validity to this argument. However, since this point of view is by no means established the provision for holdings information has been included in the system proposed, to maximize the probability that the book catalogs will be satisfactory replacements for card catalogs. There is precedent for the use of union book catalogs without holdings. The Los Angeles County Library has never shown individual library holdings in its union catalog. The Baltimore County Library system started to show holdings but abandoned the practice. Neither of these systems has reported any problems arising from the lack of holding indications. Nevertheless, from the point of view of similarity of collections and centralization of control these systems seem more analagous to libraries with branches than to the independent libraries in the New York State systems.

PREPARATION AND DELIVERY

Three preparation centers are recommended to meet upstate needs; for New York City it is recommended that physical preparation not be further centralized for the near future.

The number of physical preparation centers required to meet the criteria of cost, speed and quality of service is dependent upon three factors: the economic size of a preparation center; the amount and kind of communication linking the catalog center to the preparation function; and the effectiveness of delivery networks connecting the preparation site or sites to the public libraries throughout the state.

Economic Size. Although EDP equipment can be employed for some of the elements in the preparation cycle, such as computer-printing of labels for book pockets, book cards and book spines, such equipment does not have as wide an application in this processing function as it does in catalog production and maintenance and acquisitions. Thus the question of the optimum economic size of a preparation center depends primarily upon cost-volume relationships in physical preparation operations as they are generally performed by the existing library systems.

The statistical analysis of system processing costs contained in Exhibit I of Appendix D suggests that there is a curvilinear relationship between cost and volume for current preparation activities. Within the range of operations upon which that analysis is based— up to 400, 000 items prepared annually— actual cost experience indicates that preparation costs per item may decline as the volume increases. Furthermore, it appears that intermediate-sized preparation centers— those preparing about 100, 000 items annually— are of the least efficient size. Since the study did not uncover cost figures for volumes substantially beyond 400, 000 items per year, it was not possible to test the hypotheses that unit preparation costs continue to decline with increases in workload beyond the 400, 000 volume level.

The above findings support the centralization of physical preparation for public libraries into centers capable of handling 400, 000 items annually and argue against the establishment or maintenance of preparation centers with substantially lower annual capacities. The possibility that small additional economies could be gained by establishing one or two preparation centers of rather immense volume is not discounted. It would appear, however, that the substantial risks to the speed and quality of library processing statewide that such a level of centralization of preparation entails do not justify, at the outset at least, attempts to secure these marginal savings.

Communication. A considerable degree of detailed communication must link the centralized cataloging center to whatever preparation centers are established. In addition to the normal level of communication connecting these two interrelated functions, it seems reasonable to expect that some mistakes will be made in the course of the overall processing operation— materials for book preparation might be sent to the wrong center by the centralized cataloging staff, materials sent may be incomplete or incorrect, and so on. It also seems reasonable to think that the number of errors and the resulting preparation delays, as well as the time expended for standard communication, will increase as the number of preparation centers increases. Thus, the amount and kind of communication that develops between the cataloging center and a large configuration of preparation centers argues for minimizing the number of preparation centers.

Delivery. Theoretically, the cost and speed of alternative methods available for delivery of processed material to libraries throughout the state is a factor in the determination of the optimum number of preparation centers. This factor, however, has a minor effect on the cost, speed and quality of service criteria when compared to the significance of the two factors discussed above in determining the number of preparation centers required for current and future processing volumes in the state.

Once a decision on the number of preparation centers has been reached, however, the advantages and disadvantages of alternative delivery schemes become meaningful and merit consideration. (Section 1 of Appendix D compares cost and speed of delivery of five alternative delivery schemes serving a network of preparation centers such as the study recommends; Exhibit II of Appendix D reports the results of a mail delivery test designed to determine speed of shipment to and from a number of points in the state.)

It can be seen from this review of the three factors affecting a decision on the optimum number of preparation centers for the state that it would be highly desirable to substantially increase the degree of centralization of physical preparation if cataloging is centralized under one statewide center. At the same time, however, it does not seem advisable to carry this centralization to the extent of having one statewide preparation center.

The most desirable configuration of preparation centers in view of the above findings appears to be one involving the centralization of all the physical preparation operations of the systems outside New York City into three centers, each center being provided with the capacity to prepare not less than 400,000 items annually. It further seems desirable to continue preparation activities for the three New York City library systems within the city. Since the preparation workload of two of these three systems is already close to the suggested 400,000 items per year capacity, the preparation activities of these three systems should not be further centralized at this time.

These six preparation centers — three upstate and three in New York City — would provide a statewide preparations capacity that would exceed, by several hundred thousand items per year, present system processing requirements. The three upstate processing centers should, to the extent possible, be established with provisional capacity beyond 400,000 items per year to allow for increases in public library processing requirements and provide capacity for eventual subcontract of preparation services to non-public libraries in the state.

ACQUISITIONS

A single acquisitions center, sharing the facilities of the centralized cataloging center and extensively employing the center's EDP equipment, is recommended to meet the needs of the public libraries of the state.

Having reached the conclusions that the cataloging needs of the state would best be met by one centralized cataloging center and that the physical preparation requirements of the state's public libraries would best be served by six preparation centers, it seemed wise to consider the centralization of acquisitions alongside either the cataloging or preparation function. At the most, this would mean centralizing acquisition into six centers, each one conterminous with one of the six preparation centers. The desirability of centralizing the acquisition function beyond the level of six centers depends essentially upon considerations of the economic size of an acquisitions center and questions of effective communication between the various components of the processing cycle.

Economic Size. It appears from the operating experience of the state systems that unit savings are achievable in the acquisitions function as the number of items acquired exceeds some 200,000 items using conventional operating methods only. This suggests the possibility of having three acquisition centers, operating conventionally, serving three regions of the state. However, though savings could be expected under such an arrangement, they would not be great. Research indicates that such savings would be in the neighborhood of 5%. Centralizing all acquisition activities in one center using conventional methods might produce additional savings (an estimated 13% less than the costs of the present arrangements). But, since the cost figures upon which these estimates are based are drawn only from operations acquiring up to 400,000 items annually, there is no assurance that the trend line would continue downward as the volume rose from 400,000 items annually to 1,200,000 items or 2,000,000.

However, much of the activity in acquisitions is easily adaptable to EDP equipment. It is estimated that a single statewide center for acquisitions using EDP equipment would result in savings of about 15% of the total present acquisition costs. Moreover, though it is possible that a conventional operation attempting to purchase 2,000,000 or more items a year might drown in a sea of paper, it is not likely if EDP equipment is extensively employed. A workload of 2,000,000 items is not great by EDP standards.

Besides the operating savings, there are advantages per se in being a large purchaser. It is possible that some increase in the purchase discount received for the items bought could be achieved when bought in quantities as large as those that would be purchased by a single purchasing center. It also seems likely that a single large acquisition center would tend to get quicker and better service from vendors than would a number of purchasing operations buying the same amount. On the basis of research it was not possible to quantify these advantages in dollars, but their likelihood made it even more desirable to recommend a single acquisition center.

Communication. If there is to be one cataloging center and one acquisition center for the state, it seems wise that they should be in the same location. In the first place, there would be considerable communication between the two operations. Secondly, economies in EDP equipment could be achieved by having the same equipment serve both operations. Though it would be possible, as an alternative, to have the equipment only at one of the separated operations and ship information and EDP output back and forth as required, this would add to the complexity and costs of both operations.

PROPOSED COMPUTER-SYSTEM OPERATION

This section consists of a narrative description of the operations of the proposed computer-system and a list of the distinctly new results produced by the recommended statewide cataloging-acquisition center.

Description of Proposed Computer-System

Acquisition and Preparation. The computer maintains a master file of all titles for which there have been any orders for the past several years, and of current new titles on which orders are expected. New titles enter the system upon receipt of Library of Congress catalog copy, automatic receipt of books from publishers, or receipt of an order from a library, whichever occurs first. The system is designed with the expectation that Library of Congress copy will be available in machine readable form, but the absence of machine readable copy does not in any way negate the system design.

Every title on the master file is assigned a unique "item number." Whenever the Library of Congress card number is known, it will be used as the item number. If an LC number is not available, a New York State item number will be assigned. If an LC number subsequently becomes available, this "temporary" item number will be changed to the LC number.

When a new item is entered onto the master file or when the first order is received, whichever proves most expedient, a supplier is assigned for the particular item. This supplier will be used in the processing of additional orders until such time as it is changed. Supplier assignment may vary by preparation center.

The statewide cataloging-acquisition center will send pre-selection guides to systems' headquarters. These list all new titles entered into the system and specify their item numbers. The systems' headquarters check-off all titles which they want established for ordering in their systems. These are read into the computer by a character reader. From this information, the computer prepares selection lists which are sent to individual libraries.

In the case of large multi-branch libraries in which the branches or central agencies order new titles on multiple requisition forms, the statewide center will supply such forms in addition to pre-selection guides and selection lists.

It is expected that most ordering by libraries will be by check-off on selection lists. Next to the item to be ordered the library will check the box indicating the number of copies it desires. If the number of copies desired is not indicated, the number will have to be written in. A similar check-off would be done on multiple requisition forms.

If a library wants to order a title that does not appear on a selection list (or multiple requisition form) it initiates an order on a special requisition form. If the title appears in the book catalog, the library copies the appropriate item number from the catalog. If the title does not appear in the book catalog, but the library has access to the LC card number from some other source, then it uses this number on the requisition form. Otherwise, it submits the requisition by title and author, leaving the item number blank.

Requisitions received with item numbers are entered into the computer directly via the character scanner. Requisitions received without an item number are subject to a preliminary manual search to determine whether or not the title has yet been handled by the center. If not, the requisition causes establishment of a new item on the master file.

After entry into the computer-system, the requisition is assigned the supplier that is listed on the master file. Requisitions are accumulated in the machine by supplier, preparation center and item number, and orders are sent to the supplier.

At the time that the order is sent, two copies of a process control sheet are sent to the appropriate preparation center where they are filed to await arrival of the material ordered. One sheet is sent for each library-title combination. If the title has already been cataloged, then book pocket labels, book card labels, and spine labels are sent at the same time. If the title is new to the ordering library, then a shelf-list card is also sent. If the ordering library is one that receives catalog cards, then catalog cards are sent. If the title has not been cataloged, then the labels and cards are printed and sent to the preparation center after cataloging is completed.

When a supplier-shipment arrives at a preparation center, one copy of the process control sheet is removed and returned to the statewide cataloging-acquisitions center. If the shipment is received exactly as ordered, nothing is added to this sheet. Otherwise, deficiencies are indicated. This notifies the statewide center of receipt of books and is used to update computer-maintained outstanding order files and status files. Periodically, an outstanding order report and overdue order report are prepared for the centralized order department. These are reviewed for necessary action, including possible changes in supplier assignment on the master file. Overdue notices to suppliers will be automatically prepared by the computer-system. Such notices could either be sent directly to the appropriate vendors without further human intervention, other than the placing of the notices in envelopes, or alternatively, could be set aside for staff followup and judgmental decisions.

The accounting department at the statewide center will receive a work sheet from the computer-system showing orders placed and shipments received. The accounting department will charge invoices received from suppliers against the proper orders on the work sheets and these work sheets will be re-entered into the computer-system. The computer will calculate payment due suppliers and prepare payment vouchers for the accounting department. When these have been authorized, the computer will print checks.

When processing is completed at a preparation center and the books are delivered to the ordering library, the second copy of the process control sheet is returned to the statewide center. This serves as notification of shipments. Periodically a combined billing statement and order confirmation is prepared. Everything shipped to this particular library is listed and billed. Everything ordered but not yet shipped is listed for order confirmation. In the case of multi-branch libraries, the library headquarters will be billed. In addition, the library headquarters may submit branch budgets and the computer will charge orders against the proper branch and prepare branch budget statements.

There will be a periodic reconciliation report for the statewide center's accounting department of amounts paid to suppliers vs. amounts billed to libraries.

Cataloging and Catalog Outputs. The computer-system will prepare a cataloger's work sheet for each new title entered on the master file. These work sheets will show all information currently available on the title. This may only be author, title, and publisher. If LC copy has been received, it will be printed on the catalog work sheet. The cataloger will make necessary changes, add missing information and return the sheet to the computer room. Possibly he will return it unchanged if LC copy has been received. Each day, proofreading copy will be prepared for all newly entered catalog work sheets, and corrections will be entered for any errors discovered.

The catalog outputs of the system are book catalogs, catalog cards, and shelf-list cards. These include the statewide union book catalog and the nine regional union book catalogs.

Various outputs will be provided for professional and clerical staff use at the statewide center. The principal ones are: authority files, union shelf list, status report for all currently active items, showing the cataloging, ordering, receiving, and billing status.

Serial cataloging is carried out as described for monographs, and serials will be shown in the book catalogs. A file of active subscriptions and expiration dates, by library, will be kept for serials. From this file, subscription renewals will be generated and will be processed in a fashion similar to monograph orders. A periodic supply of process control sheets will be generated for serial check-in at the preparation centers.

New Results Produced by Statewide Cataloging-Acquisition Center

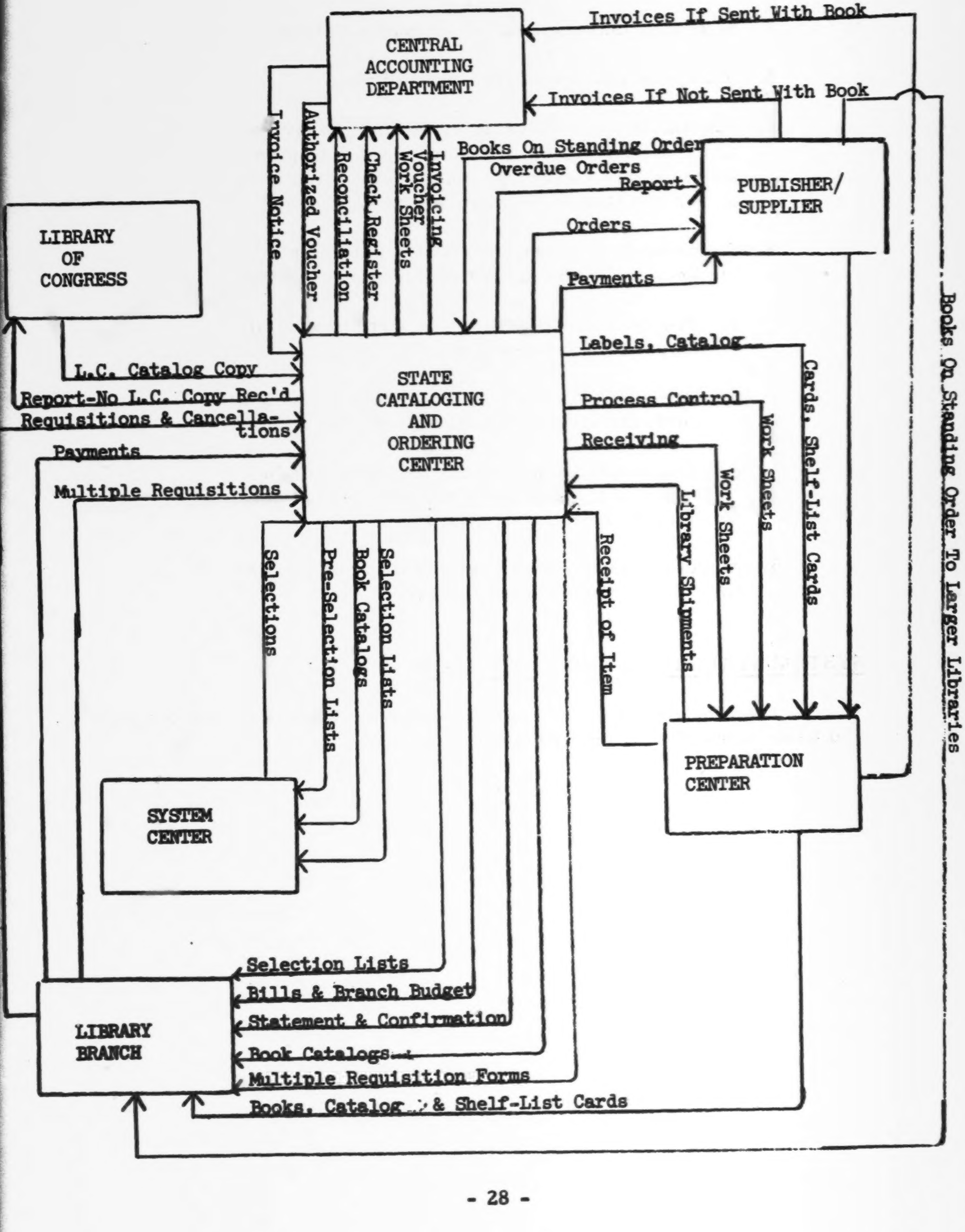
The majority of the actions carried out by the computer-system reproduce activities currently carried out at library system centers, but in a mechanized form suitable for dealing with the volume of data that would arise on a statewide basis. However, in addition to carrying out those functions, the system produces some distinctly new results listed below.

1. Statewide and regional union book catalogs;
2. Statewide listings of library holdings;
3. The facility for ordering by "item number" at libraries throughout the state and the implementation of this facility by means of printed lists on which titles to be ordered can be checked off ;
4. Simplification of the work at the cataloging center because of the following innovations:
    a. The consolidated status report showing all in-process information;
    b. Pre-printed catalog work sheets showing all currently available catalog information;
    c. The elimination of many file searches because of the ability to do searches by item number on the EDP equipment;
5. More extensive cataloging and ordering statistics than are available at present.

SYSTEM STRUCTURE AND WORK FLOW

The block diagram on the following page depicts the structure and basic work flow of the proposed system.

DIAGRAM
SYSTEM STRUCTURE AND WORK FLOW


CENTRAL ACCOUNTING DEPARTMENT
Invoices If Sent With Book
Invoices If Not Sent With Book
Invoice Notice
Authorized Voucher
Reconciliation
Check Register
Voucher Work Sheets
Invoicing
Books On Standing Order
Overdue Orders
Report
PUBLISHER/ SUPPLIER
Orders
Payments
LIBRARY OF CONGRESS
L.C. Catalog Copy
Report-No L.C. Copy Rec'd
Requisitions & Cancellations
Payments
Multiple Requisitions
STATE CATALOGING AND ORDERING CENTER
Labels, Catalog
Cards, Shelf-List Cards
Process Control
Work Sheets
Receiving
Work Sheets
Library Shipments
Receipt of Item
Books On Standing Order To Larger Libraries
Selections
Pre-Selection Lists
Book Catalogs
Selection Lists
SYSTEM CENTER
PREPARATION CENTER
Selection Lists
Bills & Branch Budget
Statement & Confirmation
Book Catalogs
Multiple Requisition Forms
Books, Catalog & Shelf-List Cards
LIBRARY BRANCH

COSTS AND SAVINGS OF RECOMMENDED NETWORK

Table 1 compares the projected annual operating cost of the recommended statewide processing system with the present cost of technical processing in the state's 22 public library systems. (A detailed description of the costs associated with the recommended system is contained in Appendix F.)

As Table 1 indicates, a statewide cataloging-acquisition center, tied to a network of six preparation centers, and producing ten book catalogs in addition to catalog cards for smaller libraries could serve the technical processing needs of the public libraries of the state and achieve an estimated annual operating saving of $880,000. This represents a saving of nearly 22% in the statewide cost of system processing.

The proposed system would realize the greatest portion of these savings from the elimination of extensive duplication of costly cataloging effort but savings would accrue from the use of EDP in the acquisition function and from a more consolidated delivery network, as well. It is estimated that the operation of the six preparation centers will be slightly more costly than current preparation activities of the processing systems, largely due to increases in the complexity of communication between the cataloging-acquisition center and the preparation centers. The most significant increases in operating costs associated with the recommended system, as shown in Table 1, relate to the production of the ten union book catalogs. It should be emphasized, however, that in addition to providing the bibliographic advantages associated with the union book catalog, the ten union catalogs proposed for the state will result in substantial long-term savings from the elimination of costly card catalog maintenance, including the work resulting from deletion of titles, replacement of worn out cards and catalog editing. Table 1 does not reflect these potential savings, showing as it does, only the cost of filing of new catalog cards under the present and proposed arrangements, since it was not possible to quantify them. These savings in card catalog maintenance will assume increasing importance as the book catalogs develop into meaningful replacements to the card catalogs of many of the public libraries in the state.

Appendix B indicates that member libraries in the state are spending between $950,000 and $1,200,000 for processing activities in addition to the $4,040,000 being spent for processing by the library systems. In many instances but especially in regard to the cataloging

ELEMENTS OF RECOMMENDED PROCESSING SYSTEM AND CATALOG OUTPUT BASED ON 2,000,000 ITEMS[a]

		Annual Operating Cost			
Function	**Recommended Form**	**Recommended System[b]**		**At Present**	
Acquisition	One acquisition—catalog center entire state (with EDP)		$ 790,000		$ 930,000
Cataloging	One acquisition—catalog center entire state (with EDP)		410,000		1,300,000
Preparation	Three centers upstate, New York City as is		860,000		830,000
Delivery	Mail upstate, New York City as is		130,000		160,000
Total processing elements			2,190,000		3,220,000
Catalogs					
Book catalog production		$710,000		—	
Card production		40,000		$330,000	
Filing of new catalog cards		220,000	970,000	490,000	820,000
Total processing elements and catalog form			$3,160,000		$4,040,000

[a] Figures rounded to nearest $10,000.

[b] Recommended system costs have been broken down by processing function according to the present scope of of each of these functions.

function, the recommended system may be able to effectively reduce these member library processing expenditures without incurring offsetting increases in the operating costs of the statewide system. To the extent that this is possible, the annual operating savings connected with the establishment of the proposed system could be significantly greater than the $880,000 projected.

COMMERCIAL PROCESSING SERVICES

A number of commercial organizations are engaged in providing processing services, some of them quite comprehensive in character. A summary review of available commercial services and prices is included in Appendix C, Section 3.

The preceding recommendations concerning the establishment of a cataloging-acquisitions center and further centralization of preparations centers are not intended to preclude the continued, and perhaps expanded, use of commercial services by libraries in the state. Perhaps the best guarantee of responsive, speedy economical service by the centers is the ready availability of an acceptable alternative. It would be desirable if the financing formula established by the state to undergird the new structure did not penalize libraries electing to use competitive commercial services. (On the other hand it would also be essential, in establishing the preparations centers, that contractual relations with libraries electing to be served by them be fixed for sufficiently long terms that a firm predictable volume of processing activity be established at the outset.)

Furthermore, in addition to the availability of commercial processors as a competitive alternative, consideration might well be given to the possibility of contracting with commercial firms for the management of one or more of the preparations centers and perhaps the cataloging-acquisitions center. Such management contracts would not, of course, diminish the control by the appropriate participating libraries. The hiring of a company would simply be an alternative to the hiring of a staff. Once the organization and financing problems have been resolved, and the specifications for such services precisely drawn, it would be useful to invite bids for such management contracts from responsible parties. If it turned out in the end, for example, that one of the three processing centers upstate were managed under such a contract, it could provide a useful yardstick for the operations of the other two.

IMPLEMENTATION

The scope of this study does not extend to questions of implementation. That limitation is appropriate since a profitable inquiry into such matters can only be undertaken after some consensus is achieved on the basic recommendations of this report. However it is quite possible to set forth now certain predictable time and cost estimates for installation of the data processing system and for system design and programming and to list a number of the issues that must be resolved. This section concludes with a statement concerning the impact of the New York City systems in the statewide plan.

Installation, System Design and Programming Time and Costs

It is estimated that the cost of installing data processing equipment (apart from the cost of renting the equipment itself) will be about $140 - $150,000. More detailed information on this estimate is included in Exhibit F, Section 2. The costs of machine rental are included in the operating cost estimates given earlier.

Initial system design is estimated to require 12 man years over a three-year period (minimum elapsed time is estimated at two-and-one-half years). Initial programming is estimated at 10 man years over a two-year period. Since programming and system design overlap the estimated elapsed time for both is three years.

It is estimated that after the initial design and programming are completed the system would be installed first in one region; it would then take about two years to test, "de-bug" and phase-in the installation statewide. A total of five years is thus required before a complete smoothly operating statewide network can be achieved. The cost of system design and programming is estimated at $430 - $450,000 over this five-year period. (For further details, see Appendix F, Section 2.)

While these capital costs appear to be quite acceptable for the operating advantages to be achieved it should also be borne in mind that other substantial non-EDP expenses will be incurred in the course of implementation. Probably the largest of these items will be the cost of the time of librarians and catalogers engaged in the exacting task of reaching full agreement on cataloging practices and rules. It is estimated that this cost may total as much as $100,000 over the implementation period. The amount involved will depend in part on the number of such persons, representing various library interests, that will be required to satisfy the potentially participating libraries.

Thus it is estimated that for an investment in implementation of some $700,000, annual operating savings of at least $880,000 will be realized.

Issues To Be Resolved

Inasmuch as five years of work will be required to make the plan fully operative after agreement is reached on going forward, it becomes urgent to give attention to the following matters:

> Organization structure: method of control of cataloging-acquisitions center and of preparations centers; participation of libraries; role of existing systems; New York City—upstate relationships.
>
> Financing: method and channels of state support of processing; role of systems and libraries; cost-sharing formula for cataloging-acquisitions center.
>
> Location: location of cataloging-acquisitions center; locations of upstate preparations centers.
>
> Catalog practices: classification rules to be employed at cataloging-acquisitions center; whether these rules should be adopted by the larger libraries during design and programming phase.
>
> Catalog conversion: whether catalog conversion of old material held by participating libraries is necessary; feasibility of partial conversion (the companion report, The Feasibility of Further Centralizing the Technical Processing Operations of the Public Libraries of New York City, discusses conversion problems in New York City in some detail; the issues are more complex on a statewide basis.)

Impact of New York City

Since the New York City systems account for about 50% of the processing activities in the state, the presence or absence of the city will have a major impact on the cost and effectiveness of any adopted scheme.

If New York City were to elect to establish a cataloging-acquisitions center for its own exclusive use and another were established to serve the upstate libraries, cataloging activity would be increased some 55% statewide. Conversely it follows that the New York City systems would achieve substantial savings in operating expenses for cataloging and acquisitions if they chose to participate in a statewide scheme. The savings to the separate parties would of course depend upon the cost-sharing formula agreed upon.

Catalog production costs are also sharply affected. As is shown in Appendix D, the annual cost of producing a statewide book catalog to serve the six or seven major libraries of the state is estimated at $259,000. In the companion New York City report it is estimated that the annual cost of producing a book catalog for the three city systems is $206,000. Therefore it is apparent that if a single catalog can be devised to satisfy the requirements of these six or seven libraries, very substantial savings can be realized by each library every year.

These considerations make it apparent that New York City has much to gain from participation in a statewide plan if delays and inconveniences do not become critical and that the state as a whole has much to gain from the inclusion of New York City in the plan if upstate needs are not sacrificed.

PRESENT CENTRALIZED PROCESSING OPERATIONS IN SYSTEMS

Extensive information on the present centralized processing operations of the various systems was gathered in a number of ways. The three most important methods were:

1. a processing activities survey questionnaire addressed to all systems;
2. field visits to five upstate systems and investigations in some depth of their respective operations; and
3. a processing cost survey questionnaire addressed to the 19 upstate systems aimed primarily at gathering detailed information on their centralized processing costs, but dealing also with some other incidental matters.

PROCESSING ACTIVITIES SURVEY

This questionnaire had two general aims: to find out what centralized processing activities the systems are engaged in and to identify that information which would be needed in the research, particularly cost data, might not be readily or reliably available. Initial research and early discussions with individuals knowledgeable about the operations of the state's public library systems indicated that detailed cost information might be hard to obtain.

The bulk of these questionnaires, 19, were administered by phone. It was considered preferable to administer the questionnaires to the upstate systems by phone rather than by mail because this method would be easier for the systems, would avoid any delays which might be involved in getting a mail questionnaire returned, and would establish potentially useful direct personal communication between personnel of the systems and study staff members. In most cases, a copy of the questionnaire was sent to the system a few days before the questionnaire call so that the librarian concerned would have some foreknowledge of what was involved and the chance to assemble whatever appropriate information was available. The director of one upstate system preferred to have the questionnaire filled out at the system by system personnel and returned the completed questionnaire by mail.

Because of their proximity to the contractor's offices, the centralized processing operations of the three New York City systems were visited personally by a member of the study staff and the questionnaires completed on the respective premises.

The questionnaire was completed for all 22 public library systems in the state. In all, 23 questionnaires were completed; one system—Chemung-Southern Tier—has two separate centralized processing operations for each of which a separate questionnaire was completed.

A copy of the questionnaire developed, "System Processing Activities Survey," is Exhibit I at the end of this appendix.

There are five major sections in this questionnaire:

I. The System (general information on the system);
II. Processing Services Available to Member Libraries;
III. Personnel and Equipment (used in centralized processing);
IV. Statistics and Costs; and
V. Union Catalog.

The section on union catalog was included because the study's scope included an investigation of the possibility of producing book catalogs as part of the overall view of public library centralized processing; such book catalogs might supplement or replace any existing union catalogs in the systems.

Tables A-1 through A-7 summarize the information gathered by these questionnaires. It will be noted no information on costs has been included. Replies to Section IV, "Statistics and Costs," were not uniformly complete and/or too approximate to be useful. For the purposes of this study it was decided that further cost figures would have to be gathered. This was done with the help of the systems' personnel by means of a second questionnaire, "Cost of Centralized Processing for System," which is discussed later in this appendix.

Table A-1

GENERAL CHARACTERISTICS OF CENTRALIZED PROCESSING OPERATIONS PUBLIC LIBRARY SYSTEMS, NEW YORK STATE

SYSTEM	Year Established	Member Libraries July 1965	Units (Member Libraries; Branches, etc.) July 1965	Libraries Using Center for Over 75% Total Processing July 1965		Non-Member Libraries Using Center's Services July 1965		Charges for Non-Members (Item) July 1965
				Members	Non-Members	Number	Type	
Brooklyn Public Library	1948	1	55	55	0	0	—	0
Buffalo and Erie County Public Library	1952	25	57	57	0	0	—	0
Chautauqua-Cattaraugus Library System	1962	31	31	31	0	0	—	0
Chemung-Southern Tier Library System								
Steele Memorial Library of Chemung County	1953	2	6	6	0	0	—	0
Southern Tier Library System	1959	33	33	33	0	0	—	0
Clinton-Essex-Franklin Library	1955	24	26	21	2	2	Public	0
Finger Lakes Library System	1959	26	25	26	0	0	—	0
Four County Library System	1961	40	40	40	0	0	—	0
Mid-Hudson Libraries	1960	50	50	50	0	0	—	0
Mid-York Library System	1961	37	37	36	0	0	—	0
Mohawk Valley Library Association	1960	10	9	9	0	0	—	0
Nassau Library System	1961	50	51	21	1	1	College	1.20
New York Public Library - Circulation Department	1940	1	86	81	0	0	—	0
Nioga Library System	1960	18	20	20	2	2	College, University	1.55
North Country Library System	1948	57	67	66	0	0	—	0
Onondaga Library System	1962	20	29	29	0	0	—	0
Pioneer Library System	1960	57	77	77	0	0	—	0
Queens Borough Public Library	1915	1	56	56	0	0	—	0
Ramapo Catskill Library System	1960	45	49	32	0	0	—	0
Southern Adirondack Library System	1959	24	25	n. a.	0	0	—	0
Suffolk Cooperative Library System	1963	41	37	33	60	60	Public, School	90
Upper Hudson Library Federation	1960	20	20	18	1	2	Public	No
Westchester Library System	1960	37	41	41	0	0	—	0

GENERAL CHARACTERISTICS OF CENTRALIZED PROCESSING OPERATIONS PUBLIC LIBRARY SYSTEMS, NEW YORK STATE

SYSTEM	Optimum Capacity July 1965		Factors Limiting Output July 1965*	Place of Bottlenecks July 1965	Time Between Members Ordering and Receipt of Material July 1965 (approximate—weeks)	
	Cataloging (Titles)	Pre- and Post-cataloging (Items)			Minimum	Average
Brooklyn Public Library	At capacity now		3	Cataloging	n. a.	n. a.
Buffalo and Erie County Public Library	25,000	180,000	2,3	Cataloging	4	6
Chautauqua-Cattaraugus Library System	At capacity now		1,3,4	Card duplication	3-1/2	4
Chemung-Southern Tier Library System						
Steele Memorial Library of Chemung County	4,000	15,000	3	Typing	3	4-6
Southern Tier Library System	5,200	26,000	3,4	n.a.	2	3-4
Clinton-Essex-Franklin Library	At capacity now		2,3,4	Cataloging	2	3
Finger Lakes Library System	10,000	66,000	1	Cataloging	3	4
Four County Library System	n.a.	41,000	n.a.	n.a.	3	4-6
Mid-Hudson Libraries	Not applicable		Not applicable	Not applicable	3	6-8
Mid-York Library System	At capacity now		2,4	Ordering	2	4
Mohawk Valley Library Association	4,000	30,000(est.)	1,3,4	Cataloging	—	4
Nassau Library System	20,000	215,000	3,4	None	3	6
New York Public Library - Circulation Department	At capacity now		4	Cataloging	n. a.	n. a.
Nioga Library System	50,000	50,000	3,4	Preparation	1 day	3
North Country Library System	n.a.	n.a.	n.a.	n.a.	3	4-5
Onondaga Library System	n.a.	72,000	n.a.	Cataloging	2-1/2	3-1/2
Pioneer Library System	12,000 (est.)	136,000 (est.)	1	Ordering	2	3
Queens Borough Public Library	At capacity now		3	Cataloging	n. a.	n. a.
Ramapo Catskill Library System	Not applicable		Not applicable	Not applicable	4	6
Southern Adirondack Library System	At capacity now		3	Cataloging	2	4
Suffolk Cooperative Library System	30,000	Unlimited	3,4	n.a.	3	4
Upper Hudson Library Federation	n.a.	36,000	4	n.a.	3	4
Westchester Library System	20,000	150,000	None	None	2-1/2	3

* Key to types of libraries represented: 1—demand; 2—machine capacity; 3—manpower; 4—space.

Table A-3

CHARACTERISTICS OF CENTRALIZED PROCESSING OPERATIONS PUBLIC LIBRARY SYSTEMS, NEW YORK STATE

Acquisitions

System	Material Purchased (1964 or Fiscal Year 1964-65)			Purchase Material for Members July 1965	Ordering Procedures July 1965		
	Book	Non-book	Total		Open	Lists	Other
Brooklyn Public Library	353,197	88,326	441,523*	Yes	No	Yes	Or in system
Buffalo and Erie County Public Library	155,160	8,897	164,057	Yes	Yes	Yes	—
Chautauqua-Cattaraugus Library System	n. a.	n. a.	n. a.	Yes	Yes	Yes	—
Chemung-Southern Tier Library System							
Steele Memorial Library of Chemung County	n. a.	n. a.	n. a.	Yes	Yes	No	—
Southern Tier Library System	23,747	31	23,778	Yes	Book yes	Yes	—
Clinton-Essex-Franklin Library	n. a.	n. a.	n. a.	Yes	Yes	Yes	—
Finger Lakes Library System	32,600	1,480	34,080	Yes	Yes	Yes	—
Four County Library System	41,050	n. a.	41,050	Yes	Yes	Yes	—
Mid-Hudson Libraries	21,859	278	22,137	Yes	Yes	Yes	—
Mid-York Library System	n. a.	n. a.	n. a.	Yes	Yes	Yes	—
Mohawk Valley Library Association	n. a.	n. a.	n. a.	Yes	Yes	Yes	—
Nassau Library System	178,203	0	178,203	Yes	Yes	Yes	—
New York Public Library - Circulation Department	n. a.	n. a.	463,957	Yes	No	Yes	Some on approval
Nioga Library System	43,859	500	44,359	Yes	Yes	No	—
North Country Library System	25,292	56	25,348	Yes	Yes	Yes	—
Onondaga Library System	n. a.	n. a.	n. a.	Yes	Yes	Yes	—
Pioneer Library System	n. a.	n. a.	n. a.	Yes	Yes	Yes	—
Queens Borough Public Library	253,442	46,554	299,996*	Yes	No	Yes	Or in system
Ramapo Catskill Library System	32,183	0	32,183	Yes	Yes	No	—
Southern Adirondack Library System	19,507	500	20,007	Yes	Yes	Yes	—
Suffolk Cooperative Library System	n. a.	n. a.	79,195	Yes	Yes	No	—
Upper Hudson Library Federation	32,480	0	32,480	Yes	Book yes	No	—
Westchester Library System	n. a.	n. a.	n. a.	Yes	Yes	Yes	—

*Items received.

Table A-4

CHARACTERISTICS OF CENTRALIZED PROCESSING OPERATIONS PUBLIC LIBRARY SYSTEMS, NEW YORK STATE

Cataloging and Catalog Maintenance

System	1964 or Fiscal Year 1964-65				Classification System July 1965	Subject Heading System July 1965
	Titles Cataloged			Catalog Cards Produced (approximate)		
	Book	Non-book	Total			
Brooklyn Public Library	24,993	2,371	27,364	1,032,946	Dewey	L.C. & Sears
Buffalo and Erie County Public Library	23,013	n.a.	n.a.	750,000	L.C. & D.C.	L.C.
Chautauqua-Cattaraugus Library System	13,111	224	13,335	200,000 (est.)	Dewey	L.C.
Chemung-Southern Tier Library System						
Steele Memorial Library of Chemung County	3,473	191	3,664	n.a.	Dewey	Sears
Southern Tier Library System	5,197	0	5,197	n.a.	Dewey	Sears
Clinton-Essex-Franklin Library	6,663	n.a.	n.a.	n.a.	Dewey	Sears
Finger Lakes Library System	9,405	n.a.	n.a.	n.a.	Dewey	L.C. & Sears
Four County Library System	n.a.	n.a.	n.a.	n.a.	Dewey	L.C.
Mid-Hudson Libraries	7,845*	278*	8,123*	n.a.*	Dewey	L.C.
Mid-York Library System	11,023	n.a.	n.a.	215,000(est.)	Dewey	L.C.
Mohawk Valley Library Association	5,905	699	6,604	n.a.	Dewey	L.C. & Sears
Nassau Library System	22,014	0	22,014	1,247,720	Dewey	L.C.
New York Public Library - Circulation Department	16,396	1,422	17,818	1,000,000+(est.)	Dewey	L.C.
Nioga Library System	38,813	500	39,313	200,000 (est.)	Dewey	L.C.
North Country Library System	7,067	n.a.	n.a.	n.a.	Dewey	Sears
Onondaga Library System	n.a.	n.a.	n.a.	n.a.	Dewey	Sears
Pioneer Library System	11,528	n.a.	n.a.	n.a.	Dewey	L.C.
Queens Borough Public Library	18,067	362	18,429	1,083,231	Dewey	L.C. & Sears
Ramapo Catskill Library System	n.a.	n.a.	—	n.a.	Dewey	L.C.
Southern Adirondack Library System	7,577	182	7,759	87,300 (est.)	Dewey	Sears
Suffolk Cooperative Library System	25,000 (est.)	n.a.	n.a.	1,386,000 (est.)	Dewey	L.C.
Upper Hudson Library Federation	7,984	0	7,984	n.a.	Dewey	L.C.
Westchester Library System	10,934	781	11,715	380,000	Dewey	L.C.

* System does no cataloging or processing; done under contract by commercial company.

Table A-5

CHARACTERISTICS OF CENTRALIZED PROCESSING OPERATIONS PUBLIC LIBRARY SYSTEMS, NEW YORK STATE

Preparation

(1964 or Fiscal Year 1964-65)

System	Books Prepared	Non-book Material Prepared	Total Items Prepared
Brooklyn Public Library	n. a.	n. a.	355,926
Buffalo and Erie County Public Library	163,805	1,783	165,588
Chautaugua-Cattaraugus Library System	33,403	549	33,952
Chemung-Southern Tier Library System			
Steele Memorial Library of Chemung County	12,802	501	13,303
Southern Tier Library System	21,482	0	21,482
Clinton-Essex-Franklin Library	12,944	395	13,339
Finger Lakes Library System	32,644	519	33,163
Four County Library System	n. a.	n. a.	41,050
Mid-Hudson Libraries	22,959*	278 *	23,237*
Mid-York Library System	41,679	1,669	43,348
Mohawk Valley Library Association	26,545	1,440	27,985
Nassau Library System	153,165	0	153,165
New York Public Library - Circulation Department	389,743	16,726	406,469
Nioga Library System	43,859	500	44,359
North Country Library System	25,292	56	25,348
Onondaga Library System	n. a.	n. a.	59,978
Pioneer Library System	111,588	2,078	113,666
Queens Borough Public Library	241,630	1,745	243,375
Ramapo Catskill Library System	32,183	0	32,183
Southern Adirondack Library System	21,826	435	22,261
Suffolk Cooperative Library System	79,195	0	79,195
Upper Hudson Library Federation	32,480	0	32,480
Westchester Library System	90,227	1,485	91,712

* System does no cataloging or processing; done under contract by commercial company.

CHARACTERISTICS OF CENTRALIZED PROCESSING OPERATIONS PUBLIC LIBRARY SYSTEMS, NEW YORK STATE

Delivery of Processed Materials

System	Book Delivery July 1965		Distance of Farthest Member From System Center (miles) July 1965
	Times per Week	Method	
Brooklyn Public Library	5	Truck	7
Buffalo and Erie County Public Library	5, 3, 1	Truck	34
Chautauqua-Cattaraugus Library System	—	Mail	60
Chemung-Southern Tier Library System			
Steele Memorial Library of Chemung County	1	Truck	6
Southern Tier Library System	1, 5	Truck	85
Clinton-Essex-Franklin Library	—	Mail	75
Finger Lakes Library System	1, 5	Truck	58
Four County Library System	1	Truck	80
Mid-Hudson Libraries*	Not applicable		62
Mid-York Library System	3, 2, 1	Truck	50
Mohawk Valley Library Association	2, 1	Truck	40
Nassau Library System	5, 4, 3	Truck	18
New York Public Library - Circulation Department	5	Truck	n. a.
Nioga Library System	3, 2, 1	Truck	60
North Country Library System	1	Truck	91
Onondaga Library System	1	Truck	22
Pioneer Library System	5, 3, 2	Truck	74
Queens Borough Public Library	5	Truck	9
Ramapo Catskill Library System*	Not applicable		60
Southern Adirondack Library System	4, 2, 1	Truck	105
Suffolk Cooperative Library System	2	Truck	50
Upper Hudson Library Federation	1	Station bus	35
Westchester Library System	2	Truck	40

*Processing done outside system.

Table A-7

CHARACTERISTICS OF THE UNION CATALOGS PUBLIC LIBRARY SYSTEMS, NEW YORK STATE

July 1965

SYSTEM	Date Started	Libraries Represented		MATERIALS INCLUDED				
				Cataloged by Center		Cataloged by Members	From Starting Date	Prior to Starting Date
		Type *	Number	All	Books Only			
Brooklyn Public Library	1896	Public	55	Yes	—	No	n. a.	n. a.
Buffalo and Erie County Public Library	1952	Public	57	Yes	—	No	—	1836
Chautaugua-Cattaraugus Library System	1962	Public	31	—	Yes	No	—	Yes, date not given
Chemung-Southern Tier Library System								
Steele Memorial Library of Chemung County	1958	Public	6	—	Yes	No	—	1943
Southern Tier Library System	1959	Public	33	Yes	—	No	Yes	No
Clinton-Essex-Franklin Library	1963	Public	26	Yes	—	No	—	1955
Finger Lakes Library System	1959	Public	26	Yes		No	Yes	No
Four County Library System	1961	Public	40	—	Yes	Yes	—	1935
Mid-Hudson Libraries	1960	Public	50	—	Yes	No	Yes	No
Mid-York Library System	1961	Public	39	—	Yes	Yes	Yes	No
Mohawk Valley Library Association	1960	Public	9	—	Yes	Yes	—	n. a.
Nassau Library System	1933	Public	51	—	Yes	No	Yes	No
New York Public Library - Circulation Department	1913	Public	81	Yes	—	No	Yes	No
Nioga Library System	1960	1, 2	20 + 2	Yes	—	No	—	1900
North Country Library System	1948	Public	67	—	Yes	No	Yes	No
Onondaga Library System	1963	Public	[illegible]		Yes	No	Yes	No
Pioneer Library System	1953	Public	77	Yes	—	No	Yes	No
Queens Borough Public Library	1909	Public	54	Yes	—	No	Yes	No
Ramapo Catskill Library System	1960	1, 2	51	—	Yes	Yes	—	1956
Southern Adirondack Library System	1959	Public	25	Yes	—	Yes	Yes	No
Suffolk Cooperative Library System	1952	1, 2, 4	36	—	Yes	Yes	Yes	Probably yes, date not known
Upper Hudson Library Federation	1960	Public	20	—	Yes	No	—	Yes, date not known
Westchester Library System	1937	1, 2, 3, 4	59	—	Yes	No	Yes	No

* [illegible] of libraries represented: 1—public; 2—college and university; 3—school; 4—special.

FIELD VISITS TO SAMPLE SYSTEMS

After the general questionnaires were completed and analyzed, five upstate systems were selected for personal visits by members of the study staff. The five systems were Southern Adirondack, Pioneer, Nioga, Mid-Hudson and Suffolk.[1]

The five systems chosen for visits were selected to provide a representative sample of the variations to be found among the 19 upstate member systems as to:

Method of centralized processing
Volume of material processed
Urban-rural pattern of area served
Size of area served
Geographic distribution within the state

The most important criterion in the selection was the system's method of doing centralized processing. Since one of the primary aims of this project was to study the various methods of centralized processing employed in the state and to determine the optimum number of processing centers in a statewide system, it was basic to the analysis that an example of each of the various methods of centralized processing be studied. The general questionnaire indicated three different ways in which centralized processing is done in the systems: 1) by what might be called the conventional method, in which the system center does the work using relatively simple standard office equipment; 2) by contract with outside organizations, either commercial or public, to do the bulk of their centralized processing; and 3) by the use of more sophisticated electronic data processing equipment, doing their own processing and selling processing services to other library organizations. All three types of operations are represented in the systems chosen.

The second most important criterion was size. This was important in order to determine what, if any, relationship there is between volume of processing and processing costs. Of the systems chosen, in terms of number of items processed annually, two are among the largest outside New York City, two are among the smallest, and one is in the medium range.

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[1] A separate but related study of the three New York City systems' centralized processing activities has been in process throughout most of the time that the study being reported on here has been conducted. The relationship between these two studies is discussed in the introduction to this study.

The remaining three criteria were of lesser importance. The sample selected included systems: 1) representative of those serving primarily rural areas, of those serving combined urban-rural areas, and of those serving suburban-rural areas; 2) representative of those spread over a broad area as well as those which are relatively compact; and 3) from various regions of the state.

In Table A-8 each of the systems selected is measured against the criteria.

On visits to these systems, processing procedures were followed step by step, processing costs were reviewed in more detail than was possible with the telephone questionnaire, and, also, much of the information was gathered which made it possible to devise the cost questionnaire sent to all upstate systems' processing centers; that questionnaire is discussed below.

COST QUESTIONNAIRE

The visits to the five sample systems confirmed the earlier evidence that complete and wholly comparable cost data on the centralized processing operations of the upstate systems were not routinely maintained. The questionnaire, "Cost of Centralized Processing for System," (Exhibit II at the end of this appendix) was therefore designed.

System personnel, both directors and others, were extremely helpful in the development of the questionnaire and, of course, in the completion of these questionnaires. A draft of the questionnaire was discussed with system directors and system personnel at two meetings held in September, one in New York City and the other in Syracuse. As a result of these meetings, and suggestions made at them by system personnel, various modifications and additions were made to the original version of the questionnaire. As was explained at the meetings, the aim of the questionnaire was not to compare the costs of the various processing centers, but rather to develop parallel figures on centralized processing costs at the respective systems which, with the addition of information gathered from the three New York City systems, would make it possible to construct a reasonable estimate of the total cost for centralized processing in the state. The total

Table A-8

SAMPLE SYSTEMS MEASURED AGAINST SELECTION CRITERIA

System	Centralized Processing Operating Method	Volume (number of items processed, 1964)	Type Area Served	Geographic Spread (miles from processing center to farthest member)	Location in State
Mid-Hudson	By contract with commercial company outside system	23, 237	Rural	62	East-Central
Nioga	Conventional*	44, 359	Rural	60	Extreme NW
Pioneer	Conventional	113, 666	Urban-Rural	74	West-Central
Southern Adirondack	Conventional	22, 261	Rural	105	NE
Suffolk	Heavily automated, electronic-data processing	79, 195	Suburban-Rural	50	Extreme SE

*This system permits completely open ordering and individualized processing.

figure thus developed could then be compared with the projected cost of possible alternative systems which might be considered in this report.

Each system was assured that its cost data would be treated in confidence for this report but would be made available to the system itself upon request. (In a number of cases this has already been done.) This report therefore does not identify by system total processing costs, processing costs per item processed, total costs for individual processing elements, or processing costs per item for individual processing elements.

In all, 20 questionnaires were sent out—one to each of the upstate systems, with the exception of Chemung-Southern Tier, which as has been noted has two centralized processing operations. A questionnaire was sent to each of that system's two processing centers. Returns were received from 18 of the 20 centers. The two centers not returning the questionnaires are among the smallest of the centralized processing operations in the public library systems of the state in terms of number of items processed in 1964. For these two systems estimates were made of their total processing costs—using the actual number of items they processed in 1964, these figures having been reported. Though the two estimates may not be as reliable as the figures derived from the actual reports, any distortion introduced into the total statewide cost figures will be a very small one indeed. Together, these two systems accounted for about 1.3% of the total items processed.

The questionnaire considered costs under five general headings. Four, acquisitions, cataloging and catalog maintenance, book preparation, and delivery of processed materials, directly related to the processing operation, and a fifth covered the cost of union catalog maintenance. Annual centralized processing statistics over a number of years for the system, as well as a listing of special holdings strengths in the entire system, were also called for.

Processing costs were separated into their four main elements to enable alternative cost comparisons for each function separately. If all processing costs were lumped together it would be difficult to make any cost comparisons by function. The application of new machines, and methods based upon their use, might result in changes which would affect some of the processing elements substantially while leaving others relatively unchanged. For example, it was important to isolate cataloging costs and catalog maintenance costs and to be able to compare costs in 1964 against projected costs under a new cataloging system in case it seemed feasible to make use of computers in this segment of the processing cycle. Union catalog maintenance costs—separated from costs involved in the maintenance of union catalogs used in centralized cataloging in a processing system—were requested so that a comparison of present union catalog maintenance costs, aside from those necessary for the cataloging operation itself, might be made with costs for cataloging and producing a union catalog which might result from the introduction of a book catalog.

The cost elements included in each of the four major functions in the processing cycle are listed on the first page of Exhibit II. Acquisitions included everything from the typing and reproduction of any order lists through ordering, order follow-ups, and the checking in of materials ordered; cataloging and catalog maintenance included searching, cataloging, production of catalog cards, and the maintenance of any records necessary for cataloging; book preparation included assembling, covering, and stamping and pasting; and delivery included the various costs involved in getting the materials from the processing center to the receiving libraries or agencies. (Cost E—"Union Catalog Maintenance"—also listed on the first page of Exhibit II, was not considered as being in the process cycle.)

The cost section of this questionnaire comprised five tables: Table I covered personnel costs involved in processing; Table II covered other costs incurred in processing such as attribution of costs for space, supplies, personnel fringe benefits, and so on; Table III asked about equipment used in the processing, the depreciation or rental thereof; Table IV dealt with cataloging tools, their cost and the percent of their use for centralized processing as distinct from their use for other services; and Table V dealt with the cost of equipment, fuel and insurance on the equipment used in delivery. The respondents were asked to indicate on each of these tables their best possible judgments on the percentage of total costs attributable to each of the four major processing elements and to union catalog maintenance. Thus, the questionnaire was designed to determine not only the salary costs of the personnel doing each of the major processing tasks, but also to get an idea of the various depreciation costs chargeable to processing operations, as well as to enable a reasonable apportionment of general overhead costs for such expenses as rental or mortgage payments, maintenance of buildings and equipment, and personnel fringe benefits to each of the processing functions and to union catalog maintenance. Research had indicated that often in the past cost estimates for centralized processing activity tended to concentrate on direct salary costs and direct supply costs, and did not take into account such elements as administrative overhead and general organizational overhead.

The individual systems were not asked to arrive at functional unit costs or total processing costs, but only to furnish enough information so that these costs could be calculated from an analysis of the completed questionnaires.

Table A-9 summarizes for the three New York City systems, for the upstate systems in two groupings, and for the state as a whole, respectively, the number of items processed, total processing costs, average processing costs per item, and the ranges in processing cost per item reported in the cost questionnaires.

As can be seen from the table, the three New York City systems in a typical year account for a large part of the total number of items processed and the total processing costs in the state, 49.1% of the number of items processed and 46.8% of the total processing costs. The average processing cost per item is somewhat lower in the three city systems than in the upstate systems. As is discussed below, this may very well be due to the difference in the scale of the city systems' operations in terms of the volume processed compared with the smaller volume processed in the respective upstate systems.

As is noted in footnote c of Table A-9, the upstate systems included in the sub-group of 14 were those reporting costs which could be analyzed for comparison according to processing function. The sub-group of six either did not report cost figures or reported cost figures which could not be broken out to permit comparison with the cost figures of other systems according to processing function. This group of six processed only 10.7% of all items processed while the costs indicated represented 9.0% of the total processing costs in the central processing operations of the state. The average processing cost per item in the group of six was somewhat lower than that for the New York City systems and considerably lower than that for the group of 14 upstate systems. This apparently lower cost per item is, at least in part, the result of differences in methods of determining costs plus an arbitrarily estimated cost for two of the systems. A brief analysis of the group of six and methods of how the costs for this group were determined will indicate why this is so.

Table A-9

CENTRALIZED PROCESSING ACTIVITIES
NEW YORK STATE PUBLIC LIBRARY SYSTEMS

1964 or 1964-65[a]

	Number of Items Processed	% Total Items	Processing Cost ($)	% Total Costs	Average Processing Cost Per Item ($)	Range in Average Processing Costs Per Item ($)
NYC Systems (excluding NY Reference)	1,005,770	49.1	1,703,489[b]	46.8	1.693	1.459 - 2.365
Other Systems: Group of 14[c]	822,207	40.2	1,605,592	44.2	1.953	1.063 - 2.873
Group of 6[d]	218,396	10.7	328,780	9.0	1.505	1.178 - 2.130
Total 20 Upstate	1,040,603	50.9	1,934,372	53.2	1.859	1.063 - 2.873
Total	2,046,373	100.0	3,637,861	100.0	1.777	1.063 - 2.873

[a] NYC figures are for 1964-65 fiscal year, upstate system figures are for calendar 1964.

[b] Excluding branch filing costs.

[c] Non New York City systems reporting cost figures which could be analyzed comparatively by processing function.

[d] Non New York City systems whose reported cost figures could not be analyzed comparatively by processing function or which did not report cost figures.

Of the six systems in the group, two of them made no report on their costs. The costs attributed for these two systems in calculating total costs were based on the total average cost per item arrived at for the sub-group of 14 upstate systems. One other of the six systems does its processing in a generally conventional way but reported certain costs which made it impossible to compare its processing activities function by function with those in the group of 14. The remaining three systems in the sub-group had their processing work done wholly or partly by some agency other that the system itself. In one of the three cases, the processing was done by a commercial firm; in the second some of the system's work was done by a commercial firm, some by another system and some by the system itself; in the third the system made a lump sum payment to one of its member libraries to do all the processing for the system.

Of the three systems which paid to have some or all of their processing done, the average processing cost per item for one of the systems was substantially higher than the average cost per item for the group of 14, while the average processing cost per item in the other two systems was substantially lower. One of the two with the lower average cost had its entire processing done by a commercial firm.

The other of the two systems accounted for some 52% of the total items processed by or for the group of six. In this system, as has been stated, a member library of the system performed all processing functions for the system in return for a lump sum payment. There is some evidence that the payment made by the system to its member for the processing work did not cover all the costs borne by that member in performing the work. The low cost to the system, therefore,does not necessarily truly reflect the actual processing cost for materials processed.

Table A-10 shows for the 14 upstate systems which had provided comparable data their respective average costs per item (and/or per title) for each of the major processing operations. The table shows the considerable variation in total processing cost per item as well as in cost per item per processing function.

Table A-10

PROCESSING COSTS PER ITEM OR TITLE
14 SELECTED NEW YORK STATE PUBLIC LIBRARY SYSTEM CENTERS
1964

(Costs in Dollars)

em	To Acquire Item [a]	To Catalog Title [b]	To Catalog Item [c]	To Prepare Item [d]	To Deliver Item [e]	To Process Item [f]
	.256	1.227	.312	.387	.109	1.063
	.221	1.380	.207	.597	.072	1.097
	.279	2.586	.625	.259	.058	1.221
	.302	6.031	.770	.229	.238	1.539
	.264	4.022	.989	.238	.085	1.576
	.262	3.467	1.019	.241	.162	1.685
	.667	8.733	.770	.266	.091	1.794
	.238	3.768	1.282	.267	.059	1.846
	.230	4.185	1.046	.444	.146	1.866
	.412	4.095	1.062	.426	.239	2.140
	.500	2.423	.765	.535	.376	2.176
	.376	4.846	1.442	.275	.144	2.239
	.859	8.160	1.076	.737	.109	2.780
	.778	6.083	1.463	.578	.054	2.873
ge for tems ve	.221-.859	1.227-8.733	.207-1.463	.229-.737	.054-.376	1.063-2.873

otal acquisition costs divided by items acquired. If no items acquired figure available for the system items processed figure for the system used. This was necessary in the case of 4 systems.

otal cataloging costs divided by titles cataloged.

otal cataloging costs divided by items processed.

otal preparation costs divided by items processed.

otal delivery costs divided by items processed.

otal costs divided by items processed.

CATALOGING CONSIDERATIONS

The following part of this appendix discusses two subjects: (1) an estimate of the number of unique titles that would be cataloged annually in an ongoing cataloging operation serving the public library systems of the state and (2) an analysis of the differences in cataloging practices followed by the various upstate systems.

Unique Titles Cataloged

In studying the situation it appeared likely that the bulk of the total number of unique titles cataloged in the state would be cataloged by at least one of the three New York City systems (excluding the Reference Department of the New York Public Library). To evaluate the amount of the duplication among titles cataloged in the three New York City systems, samples were taken of the titles cataloged by two of the systems in fiscal year 1964-65. The titles in each sample were then matched against the union catalogs of the other New York City systems, and an estimate made of the total number of unique titles cataloged by the three systems in that period.

To estimate the number of titles cataloged by upstate libraries which were not cataloged by the three New York City systems, samples of the titles cataloged in 1964 by two system processing centers—Buffalo-Erie and Suffolk—were taken and matched against the New York City union catalogs. In addition, a sampling was selected from the purchases made under the Central Book Aid (CBA) program in 1963 to the extent purchase records were available, and the titles found there also matched against the three New York City systems' union catalogs.

Buffalo-Erie's cataloging was sampled because, as the largest multi-branch library outside New York City, it might be expected that it would be most likely to be cataloging titles not cataloged at the New York City systems. Suffolk's cataloging output was sampled because of the large number of titles which its administration estimated was cataloged by it in 1964. It seemed wise to find out how many unique titles were included in Suffolk's large cataloging output. The CBA purchases were sampled because, in discussing the cataloging overlap problem with a group of system directors, it was found that in their opinion titles unique to the state that might be cataloged by the processing centers of the smaller centers would most likely be those bought under CBA. A description of the research results is given below.

New York Sampling.[1] Samples of 150 titles from the catalogers' worksheet files for 1964-65 were taken at two of the New York City systems. One sample was searched against the union catalogs of the two systems not included in the sample, while the second sample was searched only at the union catalog of the non-sampled system. The results of these sample searches are shown in Table A-11.

Table A-11

SAMPLING TO DETERMINE
NEW YORK CITY SYSTEMS' CATALOGING OVERLAP

	Same Period Match		Prior Period Match		No Match		Total Titles	
	No.	%	No.	%	No.	%	No.	%
Sample #1 (Searched in two union catalogs)	73	48.7	13	8.7	64	42.7	150	100.0
Sample #2 (Searched in one union catalog)	56	37.3	9	6.0	85	56.7	150	100.0

The "match" and "no-match" percentages resulting from the sampling procedure were applied to the systems' count of titles cataloged in 1964-65 to arrive at estimates of the number of different titles cataloged by the three systems in 1964-65 and the number of titles, among those different titles, that had never been cataloged prior to 1964-65 by any of the systems in New York City.

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[1] A detailed description of the sampling procedure and calculations used to determine cataloging overlap among the three New York City systems is contained in the companion report, The Feasibility of Further Centralizing the Technical Processing Operations of the Public Libraries of New York City, Nelson Associates, Inc., for the Brooklyn Public Library, the New York Public Library and the Queens Borough Public Library, 1966.

Of the 63,307 titles cataloged by the three systems combined in 1964-65[1], it is estimated that 43,257 were different titles. This estimate has a precision of about ±6% at the 95% confidence level. Furthermore, it is estimated that of these, 38,147 had never before been cataloged by the public libraries in New York City.

Since the large majority of the "prior period matches" reflected system time lags of less than five years in the cataloging of a title and most exhibited lags of about three years, a statewide center cataloging for the New York City library systems would experience a decline in the titles it had to catalog for these systems from an estimated initial annual level of some 43,000 titles to an estimated level of 38,000 titles. This decline would be virtually complete after five years of centralized cataloging. On the basis of these findings, it appeared reasonable to use 40,000 titles as the yearly cataloging capacity required in an established centralized center cataloging for the three New York City systems.

Upstate Samples. Samples of about 150 each of the titles cataloged by the Buffalo-Erie and Suffolk systems and of the titles ordered under CBA were taken and matched against the catalogs of the three New York City systems. After the first set of matchings, those Buffalo titles not matched at all in New York City were checked against the Buffalo catalog, and those CBA titles not matched at all in New York City were checked against both the Buffalo and Suffolk catalogs. It was not possible to do any second check against the entire group of CBA titles because they were not arranged in any logical order but stored at random.

The overall results after the second round of matchings—that of the various no match titles, as explained above, against the Buffalo-Erie and Suffolk catalogs—are shown in Table A-12.

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[1] The actual combined total reported was 63,611. This figure has been reduced by 304 to eliminate a specialized statistic entering the count of one system that was not included in the count of titles cataloged of the other two systems.

Table A-12

SELECTED TITLES UPSTATE SAMPLE MATCHED AGAINST NEW YORK CITY SYSTEMS AND SELECTED UPSTATE SYSTEMS

Titles Source	Same Year Match		Other Years Match		No Match		Total Titles	
	No.	%	No.	%	No.	%	No.	%
Buffalo-Erie	92	61.3	36	24.0	22	14.7	150	100.0
Suffolk	97	58.8	63	38.2	5	3.0	165	100.0
CBA	85	56.2	66	43.1	1	.7	152	100.0

On the basis of the above matchings an estimate was made of the number of unique titles which an ongoing state cataloging center could expect to have to catalog in addition to the approximately 40,000 unique titles cataloged among the three New York City systems. In making this estimate it was assumed that CBA titles were typical of all upstate purchases except those in the Buffalo-Erie and Suffolk systems. Buffalo-Erie was assumed to be different from all the other systems because of its position as the largest multi-branch library outside New York City. Suffolk was assumed to have a higher number of unique titles than the usual system because of the many, varied types of libraries for which it does processing. The CBA titles were assumed to represent the unique titles for the rest of the state based on what seemed the reasonableness of the impression of the system directors discussed above; that is, that the CBA titles would tend to represent the unique titles which would be cataloged by most of the upstate systems.

Using these assumptions and relying on the information on Table A-12, which took into account the effect of the titles not cataloged in New York City but cataloged more than once upstate, an estimate was made of the unique titles additional to New York City cataloged upstate in 1964. To this figure was added the estimate of unique New York City titles already made to arrive at an estimate of 44,940 unique titles to be cataloged by an ongoing center. These figures are shown on Table A-13. For the purposes of the estimates made in this report, a rounded total of 45,000 unique titles in the state has been used.

Table A-13

ESTIMATE UNIQUE TITLES TO BE CATALOGED BY STATE CATALOGING CENTER *

System	Titles Cataloged		Number Unique	
Three New York City Systems		63,307		40,000
Upstate Systems:				
Buffalo	21,230		3,121	
Suffolk	25,000		750	
Other Upstate Systems	152,656		1,069	
Total Upstate Systems		198,886		4,940
Total Entire State		262,193		44,940

* Estimates for upstate systems for 1964 calendar year; figures for New York City systems for fiscal year 1964-65.

As is noted, the title estimate applies to a statewide cataloging center after it has been established for some years and is in full, ongoing operation. It should be remembered that in addition to the titles estimated for an ongoing operation, in the first few years of operation such a cataloging center would have some additional workload made up of titles which would normally be handled as second copies in an ongoing cataloging operation. Such titles would have to be cataloged because the operation would not yet have built up a backlog of material from which it would normally draw the information to process second copies. As noted above, the research in the New York City systems indicates that for the city there would be about 5,000 of these titles in the first year of centralized cataloging; it is expected that in about five years there would be virtually none. Assuming a steady annual decline in such titles, the average number of them for New York City annually over the initial five years would be 3,000. It seems reasonable to believe that the number of such titles upstate would be considerably less than in New York

City. A generous assumption is that the upstate total would equal two-thirds of the New York City totals. If this were the case, then, in the first five years of centralized cataloging, the number of such titles would average no more than 5,000 a year for the whole state.

Upstate Systems' Cataloging Differences

To gauge the extent of cataloging differences in the 19 upstate systems, two lists of titles were sent to the processing centers in the systems; the centers were asked to return a copy of the main entry catalog card for as many of the titles on the lists as they had cataloged. One list, for adult books, contained 22 titles. The second, a list of juvenile books, contained 14 titles. The lists were chosen to represent a variety of Dewey classification areas as well as to reveal the method of treating various problems which are often involved in cataloging, such as the handling of pseudonyms. Copies of these lists are included at the end of this appendix as Exhibits III and IV respectively. The titles are numbered for the purposes of this appendix to correspond with the numbers for titles used on the tables below. Altogether the 19 systems returned a total of 532 cards, 310 for adult titles and 222 for juvenile titles. These were analyzed in various ways detailed below.

In summary, there appears to be a high degree of duplication, for both adult and juvenile titles, between the Dewey classification and main entries on the Library of Congress cards for the titles on the one hand, and the Dewey classifications and main entries used by the various systems in their cataloging on the other. In addition, the "homemade" catalog cards received indicated substantial duplication among the systems in catalog card format and the information contained on them. The results of this research suggest that most of the upstate systems are already cataloging in a substantially similar way, and that with some further, feasible effort on the part of representatives of the systems, the cataloging practices of these systems could be basically unified so that one set of practices could serve all the systems.

Adult Titles. Table A-14 shows the correspondence between the Library of Congress recommended Dewey classification number and the numbers used by the systems.[1] Altogether 79.4% of the adult title cards included in this analysis had either the same or the same but shorter Dewey number as recommended by LC.

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[1] For one of the titles there was no Dewey classification suggested by Library of Congress. For this title the Dewey classification suggested by the H. W. Wilson Company for the title was used. Since Buffalo-Erie classifies by Library of Congress classification, the cards from this system were not included for the tabulation for this table.

Table A-14

UPSTATE SYSTEMS' ADULT TITLES CATALOGED CORRESPONDENCE WITH LIBRARY OF CONGRESS SUGGESTED DEWEY CLASSIFICATION

Title No.	Dewey Classification Suggested by Library of Congress	Total Cards	Number of Cards Same Classification	Number of Cards Shorter Classification	Number of Cards Longer Classification	Number of Cards Different Classification
1	423	9	9	0	0	0
2	230.082	14	4	10	0	0
3	—	—	—	—	—	—
4	927.8	14	6	2	0	6
5	808	15	14	0	1	0
6	—	—	—	—	—	—
7	301.32082	4	1	2	0	1
8	711.4	15	8	4	0	3
9	031	16	14	0	0	2
10	031.451	18	11	2	0	5
11	176	16	11	0	0	5
12	280.973	14	8	5	0	1
13	427.973	13	4	7	0	2
14	616.89	16	13	1	0	2
15	424	11	11	0	0	0
16	809.93	8	6	2	0	0
17	923.173	16	0	0	0	16
18	191	13	13	0	0	0
19	574.5097	15	3	10	0	2
20	613.8*	15	10	0	3	2
21	—	—	—	—	—	—
22	581	15	13	0	0	2
Total cards		257	159	45	4	49
Percentage of total cards		100.0	61.9	17.5	1.6	19.1

* No LC suggested Dewey classification; this classification from H. W. Wilson Company.

Table A-15 shows the considerable correspondence between the main entries suggested for the various adult titles by the Library of Congress service and those used by the systems in their cataloging. 86.9% of the cards from the systems analyzed for this table had either the same or a shorter main entry than that recommended by Library of Congress.

In eight of the systems the continuation (title number 6) was treated as an open end entry, in three systems it received single treatment as a title main entry, while in the remaining two systems which returned cards on this title the main entry was under the editor.

Juvenile Titles. Table A-16 shows the amount of correspondence between the Library of Congress or oth[illegible]commended Dewey classification number and the actual numbers used by the systems returning cards. Altogether 70.0% of the cards analyzed had either the same or a shorter classification number as the one in the recommended source. (Three of the titles on the juvenile list had not been classified by the Library of Congress. For these three titles other bases for comparison were used. Cards for two of the titles were compared with the recommendations of the appropriate Wilson cards. For the other title the classification assigned to the title by one of the New York City systems was taken as the standard for comparison.)

Table A-17 shows the level of correspondence between the main entries suggested for the juvenile titles and those used by the systems. 95.9% of the cards analyzed for this table had either the same or a shorter main entry than that recommended in the suggested main entry.

Sources of Cards. Cards received included reproductions of Library of Congress cards or proofs (from 13 of the systems), reproductions of or actual H. W. Wilson Company cards (from six systems), and "homemade" cards from 18 systems.

"Homemade" Cards. Of the "homemade" cards all of them followed standard rules of indentations except for those received from one system. The cards from this one system exhibited an unconventional listing of bibliographic components. All "homemade" cards contained the basic bibliographic components such as author, title, publisher, and date of publication. However, only eight systems gave place of publication. Only five systems gave any indication of the size of the cataloged item, though 15 systems gave pagination. Thirteen systems had information on illustrations on their cards. Finally, there was complete agreement among the systems on listing tracings on main entry cards.

Table A-15

UPSTATE SYSTEMS' ADULT TITLES CATALOGED CORRESPONDENCE WITH LIBRARY OF CONGRESS SUGGESTED MAIN ENTRY

Title No.	Main Entry Suggested by Library of Congress	Total Cards	Number of Cards Same Main Entry	Number of Cards Shorter Main Entry	Number of Cards Longer Main Entry	Number of Cards Different Main Entry
1	World Book Encyclopedia Dictionary	9	8	0	0	1
2	Barth, Karl, 1886-	15	11	4	0	0
3	Cornwell, David John Moore, 1931-	14	2	0	0	12
4	Cross, Milton John, 1897-	15	7	7	1	0
5	Engle, Paul, 1908- ed.	16	9	6	1	0
6	(continuation title)	—	—	—	—	—
7	Seminar on Human Fertility and Population Problems	5	4	0	0	1
8	Gruen, Victor, 1903-	16	7	9	0	0
9	Kane, Joseph Nathan, 1899-	17	9	8	0	0
10	King, Martin Luther	19	18	0	1	0
11	Lederer, Esther Pauline	17	6	0	0	11
12	Look	15	9	0	2	4
13	Mencken, Henry Louis, 1880-1956	14	9	5	0	0
14	Menninger, Karl Augustus, 1893-	17	10	7	0	0
15	Roget, Peter Mark, 1779-1869	12	8	3	0	1
16	Ruitenbeek, Hendrik M., 1928- ed.	9	6	2	1	0
17	Salinger, Pierre, ed.	17	16	1	0	0
18	Schneider, Herbert Wallace, 1892-	14	7	7	0	0
19	Shelford, Victor Ernest, 1877-	16	11	5	0	0
20	U.S. Surgeon General's. . .	16	13	1	0	2
21	Wells, Herbert George, 1866-1946	8	3	5	0	0
22	Went, Frits Warmolt, 1903-	16	10	5	0	1
Total cards		297	183	75	6	33
Percentage of total cards		100.0	61.6	25.3	2.0	11.1

Table A-16

UPSTATE SYSTEMS' JUVENILE TITLES CATALOGED CORRESPONDENCE WITH SUGGESTED DEWEY CLASSIFICATION

Title No.	Dewey Classification Suggested	Total Cards	Number of Cards Same Classification	Number of Cards Shorter Classification	Number of Cards Longer Classification	Number of Cards Different Classification
1	398.2 [a]	17	2	8	0	7
2	028.52 [b]	8	1	6	0	1
3	821.082[b]	16	2	11	0	3
4	973.7 [b]	18	13	0	5	0
5	636 [c]	17	16	0	1	0
6	745.44 [b]	17	10	7	0	0
7	150 [b]	16	16	0	0	0
8	398.2 [b]	15	6	9	0	0
9	232.9 [c]	18	1	0	0	17
10	923.273[b]	13	2	4	0	7
11	621.3 [b]	15	5	0	0	10
12	—	—	—	—	—	—
13	—	—	—	—	—	—
14	—	—	—	—	—	—
Total cards		170	74	45	6	45
Percentage of total cards		100.0	43.5	26.5	3.5	26.5

[a] From one of New York City systems.
[b] From Library of Congress.
[c] From H. W. Wilson Company.

Table A-17

UPSTATE SYSTEMS' JUVENILE TITLES CATALOGED CORRESPONDENCE WITH SUGGESTED MAIN ENTRY

Title No.	Main Entry Suggested	Total Cards	Number of Cards Same Main Entry	Number of Cards Shorter Main Entry	Number of Cards Longer Main Entry	Number of Cards Different Main Entry
1	Andersen, Hans Christian, 1805-1875 [a]	18	7	11	—	—
2	Arbuthnot, May Hill, 1884- [b]	10	4	5	1	—
3	Blishen, Edward, 1920- ed. [b]	15	5	10	—	9
4	Catton, Bruce, 1899- [b]	18	5	4	—	—
5	Chrystie, Frances Nicholson, 1904- [c]	17	5	12	—	—
6	Downer, Marion [b]	17	17	—	—	—
7	Goldenson, Robert M. [b]	16	16	—	—	—
8	Haviland, Virginia, 1911- [b]	15	5	10	—	—
9	Hurd, Edith (Thacher), 1910- [c]	18	5	13	—	—
10	Kennedy, J. F., Pres. U.S., 1917-1963 [b]	12	4	8	—	—
11	Morgan, Alfred Powell, 1889- [b]	15	4	11	—	—
12	Sendak, Maurice [b]	18	18	—	—	—
13	Stockton, Frank Richard, 1834-1902 [b]	17	7	10	—	—
14	Wier, Ester [b]	16	16	—	—	—
	Total cards	222	118	94	1	9
	Percentage of total cards	100.0	53.2	42.3	.5	4.1

a From one of New York City systems.
b From Library of Congress.
c From H. W. Wilson Company.

Exhibit I

SYSTEM PROCESSING ACTIVITIES SURVEY

I. The System

A. Name of system ______________________________
____

B. Person(s) interviewed / Title(s)

Person(s) interviewed	Title(s)

C. How long processing center in operation?
____
____
____
____
____
____

II. Processing Services Available to Member Libraries

A. Purchase of materials? ______________________

1. Type(s) purchased

Type(s) purchased		Usual discount
a. Books	______________	______________
b. Periodicals	______________	______________
c. Serials	______________	______________
d. Other	______________	______________

2. Order procedure

a. Any material anytime? ______________________

b. Any book anytime, other materials
limited ordering? ______________________

c. Any book anytime, other materials not orderable at all? ____________________

d. Limitations on book ordering? ____________________

(1) Nature of limitations

(a) Only from specified lists? ____________________

i. What lists? ____________________

____

____

____

(b) By stated deadlines? ____________________

i. How long after list dates? ____________________

(c) Limited open ordering? ____________________

i. What limitation? ____________________

(d) Other limitations? ____________________

i. What other limitations?

____

____

____

____

____

3. Billing procedures on books

a. Vender bills library? ____________________

(1) Directly? ____________________

(2) System forwards bills to library? ____________________

____

(3) Other? ____________________

____

____

(4) System follow-up to insure payment? ______________________________

b. Vender bills system which bills library? ______________________________

(1) Different bills for individual library
consolidated ______________________________

not consolidated ______________________________

by system? ______________________________

(2) System pays and then collects from library?
Yes ______________ No ______________

(3) System follow-up to insure payment? ______________________________

(4) Periodicity of billing by vender ______________________________

(5) Periodicity of billing by systems ______________________________

c. Other billing procedure? ______________________________

B. Processing of materials? ______________________________

1. Type(s) processed

a. Books ______________________________

b. Periodicals ______________________________

c. Serials ______________________________

d. Other ______________________________

C. Cataloging and card preparation? ____________________

1. Cataloging classification system(s) used
   a. Adult ____________________
   b. Juvenile ____________________
   c. Other ____________________
   ____
   ____

2. Minimum number of cards prepared for each title cataloged? ____________________

3. Shelf-list cards prepared? ____________________
   ____

4. Types of book materials not cataloged, if any? __________
   ____
   ____
   ____
   ____

D. Book preparation? ____________________

1. Book pockets
   a. Furnished to member libraries? ____________________
   b. Attached to books? ____________________
   c. Customizing? (placement of pocket, printing on pocket, etc.) ____________________
   ____
   ____

2. Books spine numbered? ____________________

3. Books jacketed? ____________________

4. Ownership marks put in books? ____________________

5. Due date slips put in books? ____________________

E. Book delivery system? ____________________

1. Method? ____________________

F. Other processing services available to members from system

III. Personnel and Equipment

A. Using from form "Personnel of System" in system's annual report determine which of system personnel employed in processing (including those working partly in processing and partly elsewhere)

grade	number in grade	number professionals

B. Equipment used

equipment name	number used

IV. Statistics and Costs

A. Cost of services (if readily available)

1. What is the total annual cost for the system's processing services? ______________________________

What period? ______________________________

2. Total includes

	yes or no	amount if available
a. Direct costs		
(1) Full cost of labor employed		
(2) Full cost of supplies used		
(3) Full cost of direct administration		
b. Indirect costs		
(1) Administrative overhead		
(2) Labor overhead		
(3) Space		
(4) Utilities		
(5) Depreciation or rent for equipment		
(6) Other		

What other? ______________________________

____

____

B. Total annual income to system for processing services? ______________________

What period? ______________________

C. Annual purchases of book and non-book materials. Period? __________

Total number of items bought? ______________________

Book? ______________ Non-book? ______________

D. Annual output. Period? ______________________

1. Number of titles processed? ______________________

Book? ______________ Non-book? ______________

2. Number of items processed ? ______________________

Book? ______________ Non-book? ______________

3. Number of catalog master cards produced? __________

4. Total number of catalog cards produced? __________

5. How many titles can processing center catalog a year? ______________________

6. How many items can processing center pre- and post-catalog in a year? ______________________

a. What is limiting output of processing center?

(1) Demand? ______________________

(2) Machine capacity? ______________________

(3) Manpower? ______________________

(4) Space? ______________________

(5) Other? ______________________

b. If there is a bottleneck, at what step in processing cycle is it? ______________________________
____
____

c. How many items could be pre- and post-cataloged in a year if the bottleneck were removed? __________
____

E. Usual time between member's ordering and receipt of book? ______________________________
____

F. Approximate length of time for actual processing from receipt of book until dispatch?

1. When new catalog material prepared? ______________

2. When no new catalog material necessary? ______________

G. Use of services and charges for them

1.

function	estimate number of members using for over 75% of their needs	charge (if any)	number of non-members using for over 75% of their needs	charge
Order	______	______	______	______
Cataloging	______	______	______	______
Catalog cards	______	______	______	______
Book preparation	______	______	______	______
Delivery	______	______	______	______
Other (________)	______	______	______	______
For total processing		______		______

2. Names of non-member libraries using the system's processing services at present or which are expected to soon be using them

library	status of relationship
______________________	______________________
______________________	______________________
______________________	______________________

H. Farthest distance a member library is from processing center? ______________________

Name of member? ______________________

____

I. Approximate present processing backlog by number of volumes? ______________________

Not processed at all? ______________________

Backlog at various points in processing routines? __________

____

V. Union Catalog

A. Does system maintain a union catalog? __________

____

B. If not, is union catalog maintained by others in system area?

____

C. What materials included in union catalog?

	fiction	non-fiction
1. Adult?		
2. Young adult?		
3. Juvenile?		

4. Periodicals? ______________________

5. Serials? ______________________

6. Other? ______________________

If so, what others? ______________________

D. Number and type of libraries whose holdings are included in union catalog?

	number
1. Public	
2. College and university	
3. School	
4. Special	

E. Total number of titles included in union catalog? ____________
____

F. Union catalog started in what year? ____________

1. Materials acquired prior to that year included? ________
____

2. If so, material acquired from what date included?
____

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Exhibit II

COST OF CENTRALIZED PROCESSING FOR SYSTEM

A. Acquisitions

Include: ordering, order searching, maintenance of acquisitions files, placement of orders and communication with vendors, check in materials, billing, and record keeping. Also include typing and reproduction of lists if used as ordering tools, but do not include book selection activities.

B. Cataloging and Catalog Maintenance

Include: searching for catalog information; descriptive cataloging, subject heading and classification; production of catalog cards, book cards, and pockets; filing and maintenance of those catalogs and files necessary to the operations of centralized processing (official, main, and union catalogs, authority and over run files); and record keeping.

C. Book Preparation

Include: assembling of book pockets; stamping and pasting (book pockets, plastic covers); labeling; reinforcing of paperbacks; and record keeping. Do not include screening for binding, binding, or mending.

D. Delivery of Processed Materials

Include: receiving, shipping and delivery to member libraries; also include record keeping on deliveries, if any.

E. Union Catalog Maintenance

Include: filing, posting of holdings, marking of withdrawals, and record keeping. (Note: to be considered only if not already included in "B," i. e. only in systems where union catalog is not used in centralized processing operations.)

Table 1

SYSTEM CENTER—SALARIES

Positions Classifications	Hours per Work Week	Hours per Year		Gross Salaries Paid 1964 (108) $	Percent Staff Time per Service						
		Allocated	Worked		Centralized Processing %					Other Services %	Total %
					A	B	C	D	E		
Director V											100
Director IV											100
Director III											100
Assistant Director II											100
Assistant Director I											100
Senior Librarian III											100
Senior Librarian II											100
Senior Librarian I											100
Junior Librarian											100
Library Trainee											100
Chief Library Clerk											100
Principal Library Clerk											100
Clerk											100
Typist-Clerk											100
Secretary											100
Stenographer											100
Building Maintenance											100
Bookmobile Driver											100
Delivery Driver											100
Page											100
Other (please specify)											
											100
											100
											100
											100
											100
											100
											100

SYSTEM CENTER—OTHER EXPENSES

Expense Category	Total Cost 1964 $	Percent Expenses Cost per Service						
		Centralized Processing %					Other Services %	Total %
		A	B	C	D	E		
Building Maintenance and Property Insurance[a]								100
Office Equipment Maintenance[b]								100
Fixed Charges[c]		☒	☒	☒	☒	☒	☒	☒
Rent (406) or Mortgage Payment[e]								100
Supplies (301)								100
Telephone & Postage[d] (302 & 304)								100
Miscellaneous								100

a Includes repairs to building and building equipment (404), custodial supplies (403), utilities (401+402), and property insurance (partial 703).

b Includes repairs and service contracts for maintenance of machines and office equipment (405).

c Includes retirement (701), social security (702), and membership dues (704).

d Do not include postage for delivery of processed materials.

e If building is owned by system free of any mortgage debt, please fill in the following table:

Floor Space sq. ft.	Total Purchase Price of Building and Land (601 & 602 total for all years)	Percent Space Used per Service						
		Centralized Processing %					Other Services %	Total %
		A	B	C	D	E		
								100

Table 3

SYSTEM CENTER—EQUIPMENT

Category	Number of Items	Depreciation (if charged, partial 705)[1] $	Rental Per Year[1] $	Purchase Price Per Item[1] $	If Purchased Year Purchased	Percent Equipment Use per Service						
						Centralized Processing (%)					Other Services %	Total %
						A	B	C	D	E		
Duplicating Equipment												100
												100
												100
												100
Typewriters												100
												100
												100
												100
Office Furniture Desks												100
Chairs												100
Book Trucks												100
Etc.												100
Catalog Drawers & Cabinets												100
												100
												100
												100
Shelving												100
												100
												100
												100
Other (please specify)												100
												100
												100
												100

[1] We are interested in depreciation expenses or rental charges. If neither available, please supply purchase price and year purchased.

SYSTEM CENTER—CATALOGING TOOLS

List Titles	Number of Copies	Depreciation (if charged partial 705)[1]	Purchase Price $	Percent Cataloging Tools Use per Service		
				Centralized Processing %	Other Services %	Total %
ALA Booklist						100
Book Publishers Record						100
Book Review Digest						100
Cumulative Book Index						100
Cutter Tables						100
Library of Congress Catalogs						
- Authors						
1898-1942						100
1942-1947						100
1948-1952						100
1953-1957						100
1958-1962						100
- Subjects						
1950-1954						100
1955-1959						100
L.C. Proof Sheets						100
National Union Catalog						100
						100
						100
						100
Publishers Weekly						100
Wilson Library Cards						100
Other reference works, e.g. bibliographies, catalogs, dictionaries, directories, etc. used by centralized processing staff (please specify)						100
						100
						100

---

[1] If no depreciation figure available, please give purchase price in appropriate column.

Table 5

Delivery of Processed Materials

Please fill in: "A" for delivery by mail, and/or
"B" for delivery by system vehicle(s)

"A" Total cost of postage for delivery of processed material, 1964 (partial 304) $____________

"B" Delivery vehicle(s)

Delivery Vehicle & Model	Depreciation (if charged, partial 705)[1] $	Price (604 in year of purchase) $	Year of Purchase	Fuel, Maintenance & Insurance Costs 1964 (502 & 504, partial 703) $	Percent Vehicle Use per Service			
					Centralized Processing and Inter-Library Loan Shipments		Field, Advisory and Other Services %	Total %
					C. P. %	Int.-Lib. %		
								100
								100
								100
								100
								100

---

[1] If no depreciation figure available, please give date of purchase and purchase price in appropriate columns.

Table

VOLUME STATISTICS

	1958	1959	1960	1961	1962	1963	1964	1965	1970
Number of items ordered through center									
Number of items received									
Number of new titles cataloged at center[1]									
Number of items processed at center									
Number of items added to total system (both system and member library collections)									
Number of member libraries as of Dec. 31								☒	☒

Bases for projected figures

1965:

1970:

---

[1] Titles cataloged for first time ever at system processing center. If figures requested are not available please put down any title information which is available, with full explanation of what figures represent.

Table 7

SPECIAL HOLDINGS STRENGTHS[1]

Nature of Special Collection	Held By (system center or name of member library)	Approximate Number of Titles in Collection	Approximate Number of Titles Added Each Year

---

[1] Any subject area or special collection which you believe is unique or nearly unique in the public libraries of the state, i.e. a collection of materials in a foreign language, such as Arabic or Urdu, or special strengths in a relatively unusual subject area, such as lawn tennis or local history.

Exhibit III

STUDY OF CENTRALIZED PROCESSING IN NEW YORK STATE PUBLIC LIBRARY SYSTEMS

Catalog Card Copies Requested: Adult Titles List

Clarence L. Barnhart, ed.	The World Book Encyclopedia Dictionary Field Enterprises Educational Corp., 1964
Barth, Karl	God Here and Now, Harper & Row, 1964
Cornwell, David J.	The Spy Who Came in from the Cold, Coward, 1964
Cross, Milton	Encyclopedia of the Great Composers and Their Music, Doubleday, 1962
Engle, Paul	On Creative Writing, Dutton, 1964
Foley, Martha, ed.	The Best American Short Stories, Houghton, 1964
Greep, Roy O., ed.	Human Fertility and Population Problems, Schenkman Pub. Co., 1963
Gruen, Victor	The Heart of Our Cities, Simon and Schuster, 1964
Kane, Joseph N.	Famous First Facts, 3d ed. New York, H. W. Wilson, 1964
King, Martin Luther	Why We Can't Wait, Harper & Row, 1964
Landers, Ann	Ann Landers Talks to Teenagers About Sex, Prentice-Hall, 1964
Look	Religions in America, edited by Leo Roston, Simon and Schuster, 1963
Mencken, Henry Louis	The American Language, Knopf, 1963
Menninger, Karl A.	The Vital Balance, Viking, 1963
Roget, Peter Mark	Thesaurus of English Words and Phrases, new ed., St. Martin's Press, 1964
Ruitenbeek, Hendrik M.	Psychoanalysis and Literature, Dutton, 1964

17	Salinger, Pierre, ed.	A Tribute to John F. Kennedy, Encyclopedia Britannica, 1964
18	Schneider, Herbert W.	A History of American Philosophy, 2nd ed., Columbia University Press, 1963
19	Shelford, Victor E.	The Ecology of North America, Univ. of Illinois Press, 1963
20	U. S. Surgeon General's Advisory Committee on Smoking and Health	Smoking and Health, Van Nostrand, 1964
21	Wells, H. G.	The Time Machine, Illustrated by Joe Magnaini, Heritage Press, 1964
22	Went, Frits W.	The Plants, Time, Inc., 1963

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October 11, 1965

Exhibit IV

STUDY OF CENTRALIZED PROCESSING IN NEW YORK STATE PUBLIC LIBRARY SYSTEMS

Catalog Card Copies Requested: Juvenile Titles List

1	Andersen, Hans Christian	The Wild Swans, Illustrated by Marcia Brown, Scribner, 1963
2	Arbuthnot, May H.	Children's Books Too Good to Miss, Press of Western Reserve University, 1963
3	Blishen, Edward	Oxford Book of Poetry for Children, Watts, 1964
4	Catton, Bruce	The Battle of Gettysburg, American Heritage Pub. Co., 1963
5	Chrystie, Frances N.	Pets. Illustrated by Gillett Good Griffin, Little, Brown, 1964
6	Downer, Marion	The Story of Design, Lothrop, 1963
7	Goldenson, Robert M.	All About the Human Mind, Random House, 1963
8	Haviland, Virginia	Favorite Fairy Tales Told in Scotland. Illustrated by Barbara Cooney, Little, Brown, 1963
9	Hurd, Edith	Christmas Eve, Harper & Row, 1962
10	Kennedy, John F.	Profiles in Courage; Young Readers Memorial edition. Illustrated by Emil Weiss, Harper & Row, 1964
11	Morgan, Alfred P.	A First Electrical Book for Boys, 3d ed., Scribner, 1963
12	Sendak, Maurice	Where the Wild Things Are, Harper & Row, 1963
13	Stockton, Frank	The Griffin and the Minor Cannon. Illustrated by Maurice Sendak, Holt, 1963
14	Wier, Ester	The Loner. Illustrated by Christine Price, McKay, 1963

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October 11, 1965

MEMBER LIBRARIES AT PRESENT

GENERAL ATTITUDES

Five New York State public library systems were selected to be studied in detail for this project. The bases for their selection are discussed in Appendix A. The five systems chosen were Mid-Hudson, Nioga, Pioneer, Southern Adirondack and Suffolk. The processing centers of the five sample systems were visited, and information was also gathered from their member libraries. A questionnaire sent to these libraries was designed to find out the individual library's attitude towards centralized processing, what processing it did, and to get an estimate of the member library's processing expenses. It was hoped it would be possible to extrapolate from the results of this questionnaire and other data to get an idea of the dimensions of the processing now going on in the public libraries of the state and of the total statewide processing requirements.

Questionnaire Results

A total of 197 questionnaires were sent to the member libraries of the Mid-Hudson, Nioga, Pioneer, Southern Adirondack and Suffolk systems. One hundred and seventy-four, or 88%, of these questionnaires were returned; 141, or 72%, were received in time and were complete enough to be used in all analyses. In some cases 164 questionnaires were used in the analysis . These instances are noted and discussed below in connection with the specific questions involved. Of the 141 which provide the basic data the number of questionnaires from each system is as follows:

System	Number of Questionnaires Used in Tabulation	Questionnaires As % of Total Libraries in System
A	29	58%
B	13	72
C	56*	89
D	17	71
E	26	63
	141	72%

*56 questionnaires representing 57 libraries since two libraries answered jointly.

The questionnaire used is reproduced at the end of this appendix as Exhibit I. The exhibit also summarizes the total responses for all five systems. The responses, distributed according to the system of the responding member library, were tabulated to show the differences and similarities among the five representative systems.

Table B-1 shows, by system, the total number of books and non-books ordered during 1964, plus the number of gifts acquired. It also gives the number of items ordered through the system, the number cataloged by the system and the number prepared by the system. The most reliable figures on this table are those for items ordered and items cataloged. Not all libraries were able to supply equally reliable figures about gift books or about items prepared. Since the figure for items acquired is the sum of total items ordered and gifts, the reliability of this figure also is questionable. Books, which account for most of the items ordered, represent varying proportions of total items ordered among the systems. In System B they represent 95% of the total, in Systems C and D they represent 89% of the total, and in Systems A and E they are 88%.

The number of books ordered through the system ranges from 68% of the total for Systems A and D to 97% of the total for System C. Non-books were ordered through the system much less frequently—from a low of 1% of the total in System D to a high of 67% in System C.

Comparing figures for cataloging and ordering shows that in Systems A, B and D more books were reported cataloged by the system than were ordered through it. Several libraries where this was the case were called and it was learned that the system had processed some of their gift books or books ordered independently. In System C the number of books cataloged by the system is 99% of the number ordered through the system. In System E the number cataloged is only 85% of that ordered. Generally speaking, though, it is evident that most books ordered through the system are cataloged by it.

The third service provided by the system which is mentioned in this table is item preparation—book pockets and cards, date-due slips, etc. The questionnaire asked in relation to total book preparation activities the "approximate % of volumes so prepared in last full year by system." Some respondents interpreted the question as referring to the number of books ordered through the system; others, to the total number of books ordered; and still others, to the total number of books acquired, which includes gifts. Thus, the numbers

Table B-1

SAMPLE SYSTEM MEMBER LIBRARIES
SELECTED OVERALL PROCESSING STATISTICS
1964

		Items Ordered			Gifts	Items Acquired	Items Cataloged		Items Prepared					
		Total Ordered	Ordered Through System	Ordered Through System as % of Total			Cataloged by System	Cataloged as % of Ordered Through System	With Book Pockets	With Book Cards	With Date-Due Slips	With Spine-Labelling, Numbering	With Ownership Marks	With Jacketing
SYSTEM A	Books	21,059	14,226	68%	5,106	26,165	14,520	102%	—	—	—	—	—	—
	Non-Books	2,826	588	21	—	2,826	319	54	—	—	—	—	—	—
	Total	23,885	14,814	62	5,106	28,991	14,839	100	12,998	12,598	10,114	12,960	1,770	12,760
SYSTEM B	Books	17,116	15,322	90%	2,529	19,645	17,765	116%	—	—	—	—	—	—
	Non-Books	975	113	12	—	975	206	182	—	—	—	—	—	—
	Total	18,091	15,435	85	2,529	20,620	17,971	116	15,539	4,386	0	15,517	15,554	15,554
SYSTEM C	Books	102,920	100,272	97%	8,954	111,874	99,457	99%	—	—	—	—	—	—
	Non-Books	13,319	8,905	67	230	13,549	6,567	74	—	—	—	—	—	—
	Total	116,239	109,177	94	9,184	125,423	106,024	97	98,186	98,155	24,296	96,871	60,718	96,779
SYSTEM D	Books	14,059	9,493	68%	3,495	17,554	12,977	137%	—	—	—	—	—	—
	Non-Books	1,698	19	1	—	1,698	447	2,353	—	—	—	—	—	—
	Total	15,757	9,512	60	3,495	19,252	13,424	141	9,239	5,883	2,949	8,943	768	9,152
SYSTEM E	Books	81,867	59,356	73%	5,909	87,776	50,486	85%	—	—	—	—	—	—
	Non-Books	11,238	446	4	—	11,238	42	9	—	—	—	—	—	—
	Total	93,105	59,802	64	5,909	99,014	50,528	84	49,840	48,711	10,591	49,840	13,091	44,987

reported in these categories were not consistent and can be relied on only for general guidance.

Perhaps more interesting to note are the variations in practice among the systems. For example, fewer items in System C are given date-due slips and ownership marks than other preparation steps, while in System B fewer items are given book cards and none is given date-due slips.

Table B-2 shows that, in all systems, the two bibliographic aids reported most often as being used for book ordering are new title lists prepared by the system and book selection guides. In Systems B and C replacement title lists prepared by the system are listed almost as frequently.

Table B-3 shows the answers, by system, to questions on cataloging and classification activities. The majority of librarians in all five systems check the catalog cards at least "in general" for bibliographic content; in all but System D the majority also check at least "in general" for printing and physical appearance.

About 70% of the librarians in Systems B and E make changes in these cards; less than 50% in Systems A, C and D make changes.

Approximately 15% of the libraries in Systems A and B receive "see" and "see also" cards, while 95% receive them in System C, 81% in System E and 47% in System D. All but three out of 53 librarians in System C and five out of 21 in System E file these cards in the library catalog (data not shown in table).

Eight (62%) of the libraries in System B and 26 (46%) in System C did not respond to either part of the question about cataloging sources and cataloging tools. In the other three systems, only one or two libraries did not answer either part of this question. Only in System A was any cataloging source mentioned by a majority of the libraries; in that system 16 libraries (55%) mentioned Wilson cards. Eleven (38%) in System A also mentioned Wilson catalogs, which was the most frequently mentioned cataloging source in the other systems: 2 (15%) in System B, 11 (20%) in System C, 5 (29%) in System D and 11 (42%) in System E.

ALA cataloging rules were mentioned much more often as cataloging tools in all systems than the LC rules. Sears subject heading

Table B-2

USE OF BIBLIOGRAPHIC AIDS BY SAMPLE SYSTEM MEMBER LIBRARIES 1965

System	New Title Lists Prepared By System	Replacement Title Lists Prepared By System	Book Selection Guides	Publishers' Catalogs	Secondhand and Remainder Catalogs	Auction Catalogs	Other
A	28	11	21	9	3	0	15
B	12	11	13	7	3	1	4
C	55	41	45	24	8	2	12
D	16	8	15	9	6	2	4
E	22	12	25	13	7	0	15
Total	133	83	119	62	27	5	50

Table B-3

SAMPLE SYSTEM MEMBER LIBRARIES
CATALOGING AND CLASSIFICATION ACTIVITIES
1965

	SYSTEM A		SYSTEM B		SYSTEM C		SYSTEM D		SYSTEM E	
	Questionnaire Returned		Questionnaires Returned		Questionnaires Returned		Questionnaires Returned		Questionnaires Returned	
	Number	% *	Number	% *	Number	% *	Number	% *	Number	% *
talog Cards										
Checked for Bibliographic Content										
Minutely	5	17	3	23	6	11	0	0	2	8
In General	18	62	8	62	37	66	13	76	16	62
Not At All	5	17	2	15	9	16	4	24	7	27
No Answer	1	3	0	0	4	7	0	0	1	4
Checked for Printing and Physical Appearance										
Minutely	3	10	3	23	5	9	0	0	1	4
In General	17	59	6	46	29	52	7	41	19	73
Not At All	3	10	2	15	9	16	6	35	3	12
No Answer	6	21	2	15	13	23	4	24	3	12
Changes Made in Cards	13	45	9	69	20	36	7	41	19	73
No Changes Made	16	55	4	31	34	61	10	59	7	27
No Answer	0	0	0	0	2	4	0	0	0	0
Receives "See" & "See Also" Cards	4	14	2	15	53	95	8	47	21	81
Doesn't Receive Such Cards	25	86	11	85	1	2	9	53	5	19
No Answer	0	0	0	0	2	4	0	0	0	0
taloging Source										
LC Proof Sheets	1	3	0	0	1	2	0	0	0	0
Wilson Cards	16	55	1	8	4	7	4	24	5	19
LC Book Catalogs & NUC	2	7	0	0	4	7	1	6	3	12
Book Publishing Record	2	7	0	0	2	4	0	0	9	35
Publisher's Weekly	5	17	1	8	4	7	3	18	10	38
ALA Booklist	9	31	1	8	5	9	1	6	4	15
CBI	0	0	0	0	0	0	0	0	2	8
Wilson Catalogs	11	38	2	15	11	20	5	29	11	42
Subject Guide to Books in Print	0	0	0	0	1	2	0	0	1	4
LC Printed Cards	1	3	0	0	0	0	0	0	1	4
Book Review Digest	2	7	0	0	3	5	2	12	3	12
System Card Catalog	1	3	0	0	4	7	1	6	0	0
Publisher's Catalogs	1	3	0	0	0	0	0	0	0	0
Retail Bookseller Guide	0	0	0	0	1	2	0	0	0	0
Reader's Guide to Prose Fiction	1	3	0	0	0	0	0	0	0	0
Reader's Guide to Periodical Lit.	0	0	0	0	0	0	0	0	1	4
No Answer for Source	5	17	11	85	29	52	8	47	4	15
taloging Tools										
Cataloging Rules										
ALA	22	0	2	15	14	25	9	53	14	54
LC	2	7	0	0	2	4	0	0	6	23
Subject Heading Lists										
LC	1	3	0	0	0	0	1	6	6	23
4th edition	0	0	0	0	0	0	0	0	1	4
6th edition	0	0	0	0	1	2	0	0	1	4
Total LC	1	3	0	0	1	2	1	6	8	31
Sears	8	28	0	0	7	12	3	18	4	15
2nd edition	0	0	0	0	1	2	0	0	0	0
3rd edition	0	0	0	0	1	2	0	0	0	0
6th edition	1	3	0	0	0	0	0	0	0	0
7th edition	2	7	0	0	1	2	1	6	2	8
8th edition	5	17	4	31	5	9	9	53	6	23
Total Sears	16	55	4	31	15	27	13	76	12	46
Cutter Tables	1	3	1	8	10	18	1	6	0	0
No Answer for Tools	3	10	8	62	32	57	3	18	3	12
No Answer—Tools or Source	1	3	8	62	26	46	2	12	2	8

Totals may not add to 100% due to rounding lists are used more often than the LC lists in all systems, although in Suffolk the preference is not as pronounced as in the others.

Table B-4 tabulates the views expressed in the 141 questionnaires (representing 142 libraries) about the utility and order of desirability of alternative union catalogs.

In only two systems—Systems A and E—did a majority of libraries see an advantage in having a printed union catalog. In System B five saw some advantage, five saw none and three did not answer. With 12% and 13% not answering, respectively, 53% in System D and 59% in System C said they saw no advantage in having a union catalog.

The most desirable union catalog in the view of all five systems was alternative (a)—"Union catalog of your system, indicating holdings of member libraries." This was the choice of 50% or more (100% in System B) of those answering the question in all five systems.

Most librarians answering said that if a union catalog contained only holdings acquired after the date of its initiation, it would still be useful.

Table B-5 shows the changes in budgets and processing costs from the last fiscal year before the library joined the system to the last fiscal year at the time of reporting. (For the purposes of this table the order of the sample systems has been changed, as have their labels.)

In no system did all the librarians answer the question on operating budgets. Less than half answered this question in one system. Only the libraries which replied to the questions are included in the tabulation. Among those libraries the total of their budgets increased in all systems after joining the system—from 47% in System L to 115% in System M.

Even fewer librarians answered the question on processing costs. The information from the few returns shows that processing expenditures in member libraries decreased in all systems but System N over this time period.

Because the reaction of the member libraries to centralized processing was particularly important, the questionnaires that were received too late for complete analysis were, however, included in

SAMPLE SYSTEM MEMBER LIBRARIES

UNION CATALOG PRACTICES AND PREFERENCES

1965

	System A		System B		System C		System D		System E	
	Questionnaires Returned		Questionnaires Returned		Questionnaires Returned		Questionnaires Returned		Questionnaires Returned	
	No.	% *	No.	% *	No.	% *	No.	% *	No.	% *
Union Catalog										
See Advantages in Printed U.C.	21	72	5	38	16	29	6	35	15	58
Don't See Advantages	7	24	5	38	33	59	9	53	9	35
No Answer	1	3	3	23	7	12	2	12	2	8
Union Catalog Alternatives Ranked:										
Most Desirable										
a. Own system—holdings shown	12	41	4	31	13	23	3	18	14	54
b. Own system—no holdings shown	6	21	0	0	1	2	2	12	2	8
c. Statewide—holdings shown	2	7	0	0	1	2	1	6	0	0
d. Statewide—no holdings shown	0	0	0	0	0	0	0	0	2	8
No Answer	9	31	9	69	41	73	11	65	8	31
Second Most Desirable										
a. Own system—holdings shown	4	14	0	0	2	4	3	18	2	8
b. Own system—no holdings shown	8	28	0	0	5	9	2	12	4	15
c. Statewide—holdings shown	1	3	2	15	5	9	1	6	3	12
d. Statewide—no holdings shown	1	3	0	0	2	4	0	0	1	4
No Answer	15	52	11	85	42	75	11	65	16	62
Third Most Desirable										
a. Own system—holdings shown	1	3	0	0	0	0	0	0	2	8
b. Own system—no holdings shown	1	3	0	0	0	0	0	0	0	0
c. Statewide—holdings shown	6	21	0	0	4	7	1	6	3	12
d. Statewide—no holdings shown	3	10	0	0	7	12	1	6	2	8
No Answer	18	62	13	100	45	80	15	88	19	73
Fourth Most Desirable										
a. Own system—holdings shown	0	0	0	0	0	0	0	0	0	0
b. Own system—no holdings shown	1	3	0	0	1	2	0	0	3	12
c. Statewide—holdings shown	2	7	0	0	2	4	1	6	1	4
d. Statewide—no holdings shown	6	21	0	0	0	0	0	0	3	12
No Answer	20	69	13	100	53	95	16	94	19	73
Holdings Only From Initiation Date										
Useful	19	66	4	31	14	25	5	29	17	65
Not Useful	1	3	1	8	3	5	0	0	2	8
No Answer	9	31	8	62	39	70	12	71	7	27

* Totals may not add up to 100% due to rounding

Table B-5

SAMPLE SYSTEM MEMBER LIBRARIES OPERATING BUDGETS AND PROCESSING COSTS BEFORE AND AFTER JOINING THE SYSTEM

	Operating Budget for Library				Amount Spent on Processing Operations			
System	Number of Libraries Answering	Last Fiscal Year Before Joining System	Last Fiscal Year	% Change	Number of Libraries Answering	Last Fiscal Year Before Joining System	Last Fiscal Year	% Change
L	10	$ 156,372.47	$ 229,886.74	+ 47	7	$12,035.43	$ 6,831.59	- 43
M	21	93,662.12	201,386.31	+ 115	9	7,012.39	4,691.14	- 33
N	21	690,930.25	1,037,172.59	+ 50	12	48,693.37	52,415.39	+ 8
O	21	177,829.01	321,664.17	+ 81	6	12,844.08	7,626.39	- 41
P	13	102,227.68	176,700.32	+ 73	7	5,558.63	3,482.75	- 37
Total	86	$1,221,021.53	$1,966,810.13	+ 61	41	$86,143.90	$75,047.26	- 13

tabulations on this subject. There were still ten that couldn't be included because of insufficient information. Thus, for the following discussion we drew upon a total of 164 questionnaires, with exceptions as noted.

The librarians were asked to compare their present experience of the various processing elements—ordering, billing, cataloging, etc. —with their experience before centralized processing, and, also, to indicate how these elements measured up to their expectations.

The summary figures entered on page 10 of the questionnaire form attached as Exhibit I show that 56 to 74 respondents indicated no view on one or another aspect of the question. In all five systems, however, the majority of those who expressed any view classified all the various processing elements as much better as compared to these elements before centralized processing. Two respondents in one system ranked ordering as worse; one in the same system said billing was worse. In a second system one library ranked ordering as worse; two ranked billing and cataloging as worse; one said catalog cards were much worse. Billing was ranked worse once in a third system and ordering worse once in a fourth system. A library in this fourth system classed all processing elements as not available or taken through system because of the trustees' decision that all procedures followed before joining the system should be continued.

In rating how centralized processing has measured up to expectations, the responses were fairly evenly distributed over the three classes, much better than expected, better than expected and about as expected. Ordering was rated poorer than expected four times in one system, twice in another, and once each in two others. Billing was rated poorer than expected twice in one system and once in another. One librarian rated catalog cards and four librarians rated cataloging poorer than expected in one system.

As has been indicated above, many librarians did not answer these questions. In some instances, the questions weren't answered because the librarians had not been employed by the library before centralized processing and therefore couldn't evaluate the changes. However, as shown on the next page, 26 librarians who had been employed by the library before it joined the system were also among those who did not answer the question; and 34 librarians who had not been on the staff before the library joined the system did answer the question asking for an overall evaluation of centralized processing.

	Answer	No Answer	Total
Employed before	68	26	94
Not employed before	34	36	70
Total	102	62	164

Table B-6 shows the librarians' overall evaluation of centralized processing, distributed according to the size of the holdings in the respondents' libraries. This table considers only the responses from the 94 librarians who were employed by the respective member library before it joined the system. Forty-five librarians rated centralized processing as much better; 14 as better, and eight as about the same. The data suggest that the smaller libraries tend to give centralized processing a higher rating than do the larger libraries.

Table B-6

MEMBER LIBRARIES' RATING OF CENTRALIZED PROCESSING
GROUP OF 94

1964 Holdings	Not Available	Much Better	Better	About the Same	Worse	Much Worse	No Answer
0- 5,000	0	11	0	0	0	0	3
5,001-10,000	1	14	7	0	0	0	10
10,001-15,000	0	11	3	0	0	0	4
15,001-20,000	0	4	2	0	0	0	3
20,001-25,000	0	0	1	1	0	0	2
25,001-30,000	0	1	0	0	0	0	2
30,001-40,000	0	1	0	2	0	0	0
40,001-50,000	0	1	1	0	0	0	0
50,001-60,000	0	0	0	1	0	0	2
60,001 +	0	2	0	4	0	0	0
Total	1	45	14	8	0	0	26

Finally, the answers to the general question 8 on page 10 of the member library questionnaire were analyzed for the sample systems. The results of this analysis are shown in Table B-7.

Table B-7

SAMPLE SYSTEM MEMBER LIBRARIES
OVERALL REACTIONS TO CENTRALIZED PROCESSING

	Favorable	Evenly Balanced	Unfavorable	No Answer
General reaction	112	10	2	40
Comments on specific factors				
Speed	5	—	39	—
Savings on processing costs	17	—	0	—
Discount	3	—	1	—
Catalog cards	8	—	6	—
Cataloging	1	—	13	—
Professional standards	19	—	0	—
Better public service	12	—	0	—
Time saved	30	—	0	—
Limited cataloging	0	—	2	—
Selections on book lists	1	—	6	—
Preparation standards	0	—	1	—
Match library's previous cataloging	0	—	3	—
Vender service	0	—	1	—
Billing procedure	0	—	4	—
Administrative convenience	1	—	0	—
Necessity for conformity to one set of practices	0	—	1	—
Not enough types of books processed	0	—	1	—

As can be seen, the general reaction to centralized processing was extremely favorable. There was, however, dissatisfaction in a number of areas, most frequently regarding speed of delivery and the cataloging information furnished. It should be noted that many of the comments were merely paraphrases of answers to specific questions in the questionnaire, although the comments also did cover other specific factors not raised in the questionnaire.

Table B-8 shows the distribution, according to size of holdings of the two samples—one of the 164 libraries and one of the 94 libraries—and of all public libraries in the state excluding New York City. It will be seen that the samples used in the study parallel closely the distribution by size of holdings of all public libraries in the state outside New York City.

Table B-8

COMPARISON HOLDINGS—GROUP OF 94 WITH GROUP OF 164 AND ALL UPSTATE LIBRARIES

Library Holdings	Sample of 94 Libraries		Sample of 164 Libraries		All Libraries Excluding NYC	
0- 5,000	14	(15%)	26	(16%)	144	(22%)
5,001- 10,000	32	(34)	59	(36)	192	(29)
10,001- 20,000	27	(29)	48	(29)	162	(25)
20,001- 40,000	10	(11)	19	(12)	81	(12)
40,001- 65,000	5	(5)	5	(3)	38	(6)
65,001-100,000	3	(3)	4	(2)	21	(3)
100,001+	3	(3)	3	(2)	22	(3)
	94	100%)	164	(100%)	660	(100%)

Member Library Visits

In addition to the administration and analysis of the questionnaires it was considered desirable to visit a sample of the member libraries in the sample systems. Visits were made to at least two member libraries in each of the sample systems, a total of 12 libraries. This made possible interviews with a variety of librarians throughout the state to get their reactions to and experiences with centralized processing beyond what might have been covered by the questionnaire. These visits tended to confirm the favorable response to centralized processing noted earlier, but also uncovered specific complaints about the service at a few of the libraries.

Ten of the 12 indicated they were generally very pleased with the system. One of the other two, which is both a school and public library, thought that the system was too slow in filling orders, and was troubled by all the paperwork for both the system and the school accounts. (This last problem has since been eliminated by the system.)

The other librarian also thought the delivery of books was too slow and that rapid delivery was most important to meet the demands of the community for currently popular books. Six of the other librarians mentioned that they thought orders were slow in being filled by the system but this did not create a hardship for them.

All of the 12 librarians said that they would always want to order at least some of their books independently—for speed or economy.

MEMBER LIBRARY PROCESSING COSTS IN 1964

A number of elements were considered in determining estimated processing costs for member libraries in 1964. The basic one was the figures on processing costs derived from the questionnaire sent to the member libraries of the sample systems. Fifty of the questionnaires returned contained information on processing cost estimates which was sufficiently comprehensive to be utilized for purposes of comparison and analysis. The 50 libraries estimated that they spent $80,623 in 1964 on processing activities. In order to extrapolate from this sample to the total processing costs directly incurred by member libraries (i. e. apart from centralized processing costs) it was necessary to determine the relationship of the costs incurred by the 50 libraries in the sample to the costs incurred by all other upstate member libraries.

A basic assumption underlying the methods used is that the member libraries reporting costs are a representative sample of the member libraries in the various systems. As will be remembered, the libraries to which questionnaires were sent were members of the five sample systems. These systems were deliberately chosen, as was described in Appendix A, to include a representative selection of member libraries from among all those in the various systems of the state. It is, therefore, believed that the member libraries reporting costs comprise a correspondingly representative sample of the entire group of upstate member libraries.

For the purpose of calculating directly incurred member library processing costs the operations of the New York City systems are not relevant since the processing in these systems is centralized. A further group of libraries was also excluded. Processing costs for libraries serving as processing centers were obtained through the cost questionnaire completed by all 19 upstate library systems. These libraries were, therefore, excluded from the calculations pertaining to "member libraries" in the following discussion.

Table B-9 shows total member library cost estimates developed from the questionnaires received from the sample of 50 libraries, on the basis of book stock added. The total books added for member libraries reporting costs was then divided by the total number of books added by upstate member libraries, as defined above, to find what percentage of total books added was accounted for by the member libraries reporting costs. The assumption was then made that the same relationship obtained between processing costs for the member libraries reporting costs and total statewide processing costs for member libraries, as between books added to book stock by member libraries reporting costs and books added to book stock statewide by the upstate member libraries.

As seen in Table B-9, the member libraries reporting costs added 92,884 books to their book stock in 1964, or 8.4% of all books added by upstate member libraries (as defined above). Costs reported by the member libraries reporting costs, as already noted, were $80,623. On the above noted assumption that this $80,623 was 8.4% of total processing costs in 1964 in the member libraries a figure of $959,798 was arrived at for the total processing costs.

The same general procedure was followed in determining estimated processing costs for all upstate member libraries on the basis of three other measures. These other measures were: expenditures for books, periodicals and binding; total expenditures excluding capital expenditures; and books processed.

These bases for calculation were selected because it was believed that they would tend to be positively correlated with total processing costs sought. It is obviously reasonable to suppose that the number of books added to book stock will have a bearing on total processing costs, as would expenditures for books, periodicals and bindings. Expenditures excluding capital would also seem to bear some relationship to total processing costs, although they seem not to be as directly related as "books added" and "expenditures for books, periodicals and bindings" to processing costs.

Table B-10 projects estimated total processing costs for upstate member libraries on the bases outlined above. The mechanics of the cost determination were as follows: the number of books added

Table B-9

PROCESS COSTS/BOOKS ADDED
1964

System	Process Costs—Sample Libraries	Added to Book Stock—Sample Libraries
A	$ 8,503	11,463
B	19,217	21,838
C	1,032	11,890
D	5,884	11,899
E	45,987	35,794
Total	$80,623	92,884

Books Added Upstate Member Libraries: 1,102,651

$$\frac{\text{Books Added Sample Libraries}}{\text{Books Added Upstate Member Libraries}} = \frac{92,884}{1,102,651} = 8.4\%$$

Process Costs Upstate Member Libraries if Sample Costs 8.4% of Total Costs: $959,798

Table B-10

ESTIMATED MEMBER LIBRARIES' PROCESSING COSTS UPSTATE NEW YORK PUBLIC LIBRARY SYSTEMS

	Books Added to Book Stock	Expenditures Books, Periodicals and Bindings	Expenditures Excluding Capital	Books Processed
Member libraries in sample	92,884[a]	$ 297,362[a]	$ 1,385,208[a]	20,212[b]
Total upstate member libraries	1,102,651[a]	$3,598,833[a]	$17,395,084[a]	301,965[c]
Percent sample represents of total upstate member libraries	8.4	8.3	8.0	6.7
	Costs Extrapolated From Above			
Estimated total processing costs for all upstate member libraries	$959,798	$ 971,361	$ 1,007,788	$1,203,328

[a] Source: Public and Association Libraries Statistics, 1964; Library Extension Division, New York State Education Department.

[b] Source: Questionnaires returned by sample member libraries.

[c] Source: Public and Association Libraries Statistics, 1964 cited above; information gathered in course of this study.

to book stock in 1964 by the member libraries reporting costs was tabulated from the appropriate information in the publication, Public and Association Libraries Statistics, 1964. The number of books added to book stock for all appropriate member libraries was obtained from the same source, as were expenditures for books, periodicals and bindings, and expenditures excluding capital. The figure for books processed was arrived at by estimating the number of books processed for the upstate member libraries (as defined) by the upstate processing centers in 1964 and then subtracting this figure from the total books added by the same libraries in the same year. The total number of books processed by the processing centers for the defined upstate member libraries was determined by subtracting from total books processed by the upstate system processing centers (as determined in the course of this study) an estimate of total books processed by system centers for themselves or for branch libraries of which the system center was also the central library (using as the basis for this estimate the figures in Public and Association Libraries Statistics, 1964 for the system centers).

It will be seen from Table B-10 that total processing costs estimated on these alternative assumptions range from $959, 798 to $1, 203, 328. The percentage of expenditures excluding capital of the member libraries reporting costs bore approximately the same ratio (8. 0%) to the total expenditures excluding capital for all the included upstate member libraries, as did the books added, and expenditures for books, periodicals and bindings, for the member libraries reporting costs to the overall totals (8. 4% and 8. 3% respectively). The measure which would seem to most directly affect processing costs—the fourth one employed, books processed—results in somewhat higher total processing costs for the member libraries involved. This may be accounted for in part by the fact that the figure for books added statewide by member libraries was not an independent datum but was derived from other data, as described above. However, this estimated total cost should not be rejected because it diverges from the other projected totals. Though the methods used in arriving at the estimates are considered both reasonable and reasonably reliable, it is not claimed that any one of them alone produces completely reliable results. Under the circumstances, and taking into account all aspects of this particular situation, it is believed all the measures used should be taken into consideration, and a range of estimated total processing costs for upstate member libraries be considered rather than one figure. The range, then, is between $950, 000 and $1, 200, 000. Perhaps considering the consistency of the three measures relying directly on figures in Public and Association Libraries Statistics, 1964, the actual figure may be closer to $1,000,000 than to $1,200,000.

A note in conclusion: The responses from the member libraries on costs indicate that, contrary to some opinion in the field, at least for these libraries there had been some decline in their processing costs following the institution of centralized processing. As is noted above in this appendix, 41 libraries estimated their processing costs both before centralized processing and after it. Their answers showed their total costs had dropped a little over $11,000 since centralized processing. This represented a percentage drop of nearly 13% from the previous total. In fact, if the increase in processing expenses for these libraries had kept pace with the increase in their total budgets, the processing expense would be about 85% more than it now is. The total figures involved are relatively small but, as can be seen, the percentage gains are significant.

Exhibit I

MEMBER LIBRARY QUESTIONNAIRE

Number of Questionnaires Sent to Member Libraries in Five Sample Systems.	197	
Number of Questionnaires Returned.	174	(88%)
Number of Questionnaires Used in Tabulation.	141 164	(72%) (83%)

STUDY OF CENTRALIZED PROCESSING
IN
NEW YORK STATE PUBLIC LIBRARY SYSTEMS
Member Library Questionnaire

Member library ____

I. Acquisition

1. Would you please fill in the following columns regarding your ordering activities? (Any gifts should not be considered when furnishing the following information.)

Kind of material	Check if collected	Approximate number of items each kind ordered last full year	Approximate number of items each kind ordered last full year through system	
Books		237,021	198,669	(83.8%)
Periodicals				
Newspapers				
Serials & continuations				
Motion pictures & film strips				
Microfilm materials				
Music scores				
Pamphlets & ephemera				
Pictures & prints				
Phonograph records				
Tapes				
Total Non-books		30,056	10,071	(33.5%)
Total Books and Non-books		267,077	208,740	(78.2%)

2. For books ordered, which of the following aids were used to secure bibliographic information?

Bibliographic aid	Number of Member Libraries Using Bibliographic Aid
New titles lists prepared by system	133
Replacement titles lists prepared by system	83
Book selection guides (Kirkus, ALA bklist, etc.)	119
Publishers' catalogs	62
Second hand & remainder catalogs	27
Auction catalogs	5
Other (please specify)	50

3. **What percentage of total books added to your library in last full year were gift books?** 9.9%

4. **If you do not take full advantage of the ordering services offered by the system, why do you not do so?**

5. **Are there any additional materials you would like orderable through the system, or additional ordering services provided by it?**

Additional materials	**Additional services**

II. Cataloging and Classification

1. **Would you please fill in the following columns regarding your cataloging activities?**

Kind of material	**Approximate number of items cataloged in last full year by system**
Books	195,205
Periodicals	
Newspapers	
Serials & continuations	
Motion pictures & film strips	
Microfilm materials	
Music scores	
Pamphlets & ephemera	
Pictures & prints	
Phonograph records	
Tapes	
Non-books	7,581
Total Books and Non-books	202,786

2. **If you get catalog cards prepared by the system do you check them for:**

	Minutely	In general	Not at all	No Answer
Bibliographic content	16	92	27	6
Printing & physical appearances	12	78	23	28

3. **Do you make any changes in them? Yes** 68 **No** 71 2

4. **If yes, where and how often do you make changes?**

Catalog card elements	Always	Usually (at least 50% of the time)	Seldom (less than 50% of the time)	Never	No Answer
Call number	18	6	39	21	57
Main entry	13	5	20	27	76
Descriptive cataloging	9	6	12	37	77
Subject headings	9	9	29	24	70
Added entries	7	9	29	23	73

5. **Do you receive "see" and "see also" reference cards with the catalog cards sent by the system? Yes** 88 **No** 51 **No Answer** 2

6. **If you do, are these cards filed in your catalog(s)? Yes** 80 **No** 8

7. **Do you find it necessary to develop your own "see" and "see also" references?**

Always	Usually (at least 50% of the time)	Seldom (less than 50% of the time)	Never	No Answer
7	3	52	65	14

8. **If you do develop such cross-references, do you send copies of them to the system? Yes** 1 **No** 61

9. If you do original cataloging what sources of cataloging information and cataloging tools do you use?

Cataloging source	Check if used
proof sheets	2
son cards	30
book catalog	7
tional union catalog	3
ok Publishing Record	13
blisher's Weekly	23
her (please specify)	
A Book List	20
ndard Catalog for Pub. Librs.	34
ildren's Catalog	4
ndard Catalog for High School Libraries	1
ction Catalog	1
ok Review Digest	10
stem Card Catalog	6

Cataloging tool		Check if used
Cataloging rules		
ALA		61
LC		10
Subject headings lists	Edition	
LC	4, 6	11
Sears	2,3,6,7,8	60
Other (please specify)		
Dewey Decimal Classification		29
Cutter tables		13
Other (please specify)		

10. Which of the following catalogs do you maintain?

Catalog	Check if maintained	Approximate number of titles included	Approximate number of cards included
fficial catalog (if more than one, list separately)			
ublic & divisional catalogs, etc. (if more than one, list separately)			
ame authority file	15		
ubject authority file	16		
helf list	104		

11. In what form of arrangement do you keep the catalog(s) you maintain?
Dictionary 111 **Divided** 15 **No catalog maintained** 4
Dictionary and Divided 4 **No answer** 7

12. If divided, what kind of entries do you keep in each section?

13. If you maintain a shelf list, what do you use it for?
Inventory - 75; buying guide - 25; price source - 33;
number of copies of titles - 30

14. If you maintain a shelf list, aside from making additions, approximately how often do you consult it?
Annually 13 **Monthly** 21 **Weekly** 35 **Daily** 41
Other (please specify) 8
No answer 23

15. If authority files are kept, in what way are they maintained?
Separately 3
Inter-filed in catalog(s) 6
Other (please specify) 0
No answer 132

16. If you do not take full advantage of the cataloging services offered by the system, why do you not do so?

17. Are there any cataloging services you would like available from the system which are not now available, e.g. cataloging of additional type of materials? (If any such additional services, please specify.)

Materials Preparation

1. Would you please fill in the following columns regarding your book preparation activities?

Preparation Element	Check if used by library	Approximate % of total volume so prepared in last full year by system Number of Volumes
Book pockets		185,802
Book cards		169,733
Date-due slips		47,950
Spine labeling and numbering		184,131
Ownership marks		91,901
Jacketing		179,232
Other (please specify)		

2. If you do not take full advantage of the materials preparation services offered by the system, why do you not do so?

3. Are there any materials preparation services you would like available from the system which are not now available?

V. Union Catalog

1. If the system has a union catalog, do you regularly supply it with copies of entries for books which you catalog for your library? Yes 54 No 69 No Answer 18

2. Do you regularly report deletions from your collection to the union catalog? Yes 28 No 93 No Answer 20

3. If you report, how do you do so?

	By card	Typed lists	Other (please specify)	No Answer
Additions	48	4	0	89
Deletions	23	6	0	112

4. Do you see any advantage in having a printed union catalog of some kind? Yes 63 No 63 No Answer 15

5. Assuming that you see an advantage in having a copy of a printed union catalog in your library, how would you rank the following alternatives in terms of desirability? (Mark most desirable "1," second most desirable "2," and so on.)

	Most Desirable	2nd Most Desirable
a. Union catalog of your system, indicating holdings of member libraries	46	11
b. Union catalog of your system with no indication of holdings by library	11	19
c. Union catalog of all 22 public library systems in state, indicating holdings by system *	4	12
d. Union catalog of all public library systems, indicating holdings by individual library in each of the systems*	2	4
e. Other (please specify)		
f. A combination of the above (please specify)		
No Answer --	78	95

6. Again assuming that you see an advantage in a printed union catalog if the ones referred to above contained only holdings acquired from the date of their initiation, would you still find them useful? Yes 59 No 7 No Answer 75

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* Would not include the holdings of New York Public Library's Reference Department.

General Information

1. Were you employed by the library before it joined the system?

Yes________ No________

(If "no," please answer questions 2-7 following only when the information necessary is readily available to you.)

2. Would you please give us the following information on your processing activities now and before centralized processing was available from the system? (In determining number of personnel used count those doing activities from ordering—but not selection—until item is ready for shelving [including delivery costs after preparation, if any] . Where a person does not work full time on processing activities, make best reasonable estimate of what percentage of time such individuals spend on processing work.)

	Processing activities		
	Now	Before system's centralized processing	Number of Libraries Answering
Professionals employed	42.79	41.72	40
Non-professionals employed	145.52	110.85	68
Total			
Approximate number square feet devoted to processing	10,956	11,150	40

3. Of the following processing activities please check those done before and after joining the system, and by whom? (If activity now done by both library and system, please check both.)

Processing activity	Done by library before joining system	Done now by system	Done now by library	Done now only by system
der	102	82	71	36
lling	77	86	40	56
taloging				
classification	99	106	53	54
card preparation	97	104	51	52
card purchase	86	95	44	53
ok preparation				
book pockets	103	106	55	49
book cards	100	95	62	41
date-due slips	90	69	55	35
spine-labeling & numbering	98	104	52	52

Processing activity	Done by library before joining system	Done now by system	Done now by library	
Book preparation, cont.				
- ownership marks	103	42	83	21
- jacketing	91	104	43	64
- reinforcing of paperbacks	39	45	30	32
Other (please specify)				

4. What was the operating budget for your library?

Last fiscal year $	Last fiscal year before joining system $	Number of libraries answering
$1,966,810.13	$1,221,021.53	86

5. Of that amount what percentage would you estimate was spent on processing operations? (The percentage should include any payments made to the system for processing services.)

Last fiscal year %	Last fiscal year before joining system %	Number o libraries answering
$75,047.26	$86,143.90	41

centralized processing?

Processing element	Not available or taken from system	Much better	Better	About same	Worse	Much worse	No Answer
Ordering	2	62	19	16	4	0	61
Billing	2	57	18	18	4	0	65
Cataloging	1	76	19	10	2	0	56
Catalog cards	1	76	20	10	0	1	56
Preparation	1	65	13	11	0	0	74
Overall evaluation	1	69	24	8	0	0	62

7. How has centralized processing measured up in relation to your expectations for it?

Processing element	Not available or taken from system	Much better than expected	Better than expected	About as expected	Poorer than expected	Much poorer than expected	No Answer
Ordering	0	33	24	39	8	0	60
Billing	2	35	25	36	3	0	63
Cataloging	0	36	33	31	1	0	63
Catalog cards	0	39	28	31	4	0	62
Preparation	0	37	28	32	0	0	67
Overall evaluation	0	38	34	28	0	0	64

8. Would you please sum up your opinion of centralized processing: what are its drawbacks, its advantages?; if it were to be done all over again in your system, what-if-any-changes would you suggest in the division of processing responsibilities between system and library? etc.?

(see Table B-7)

RESULTS OF OTHER RESEARCH

Section 1

State Library Considerations

The state library occupies an unique position in the library structure of New York State. While one of the leading research libraries of the state, it is also important in relation to the state's public libraries, since it is the major backstop for most of the public libraries and systems of the state for hard-to-get materials requested by their constituents. It was therefore important to consider the possibility of including the state library's cataloging needs in any reorganization of cataloging which might be proposed for the public library systems of the state.

The first step was to determine what overlap there might be in the cataloging at the state library and in New York City by matching a representative selection of recent titles cataloged by the state library with the catalogs of the three New York City systems. The rationale for determining cataloging overlap in the state in this manner has been discussed above in Appendix A.

Unfortunately it was not possible to select, as in the other collections sampled, from the cataloging output of an entire year because such information was not available. A selection of 150 titles was therefore made from the general cataloging output of the library in August through November of 1965. The librarian responsible confirmed that the cataloging distribution in the period was representative of the normal cataloging distribution throughout the year. The 150 titles included a random selection of serials cataloged at the library in November 1965. Again, information on serials cataloging was not available for a whole year. The number of serial items selected was in the proportion represented by serials in the total annual cataloging output at the library. As in the other cases of investigation of cataloging overlap between cataloging centers, the titles selected from the output at the state library were matched in turn against the catalogs of Brooklyn, Queens and Manhattan. When a same year match was found at Brooklyn or Queens, the particular title was not searched further. Table C-1 shows the results of this comparison.

Table C-1

STATE LIBRARY—PUBLIC LIBRARY CATALOGING MATCH

State Library Titles Total Selected 1965		Matching Public Library Titles					
		Titles Cataloged in 1965		Titles Cataloged Other Years		Titles Not Cataloged	
Number	%	Number	%	Number	%	Number	%
150	100.0	70	46.7	10	6.7	70	46.7

The degree of duplication between state library cataloging and that in the New York City systems was low when compared with the rates of duplication between the three New York City systems and the Suffolk and Buffalo-Erie systems, Central Book Aid titles, and school and college titles. [The school and college title comparisons with the New York City systems are described in the report, Feasibility of School and College Library Processing Through Public Library Systems in New York State, (Nelson Associates, Inc., for the New York State Library, 1966).]

The relatively low level of duplication suggests that, in addition to its important role in public library interloan activity in the state, the state library collects heavily in areas not covered in other public libraries in the state. For example, as a research library, it is geared to supplying the library needs of the legislature and government administration in Albany, and much of this material is not collected elsewhere.

In calendar year 1965 the state library cataloged 15,041 titles new to it. Assuming the level of duplication found between the selection of titles from the state library and the three New York City systems was the same for the entire cataloging output of the state library in 1965, and assuming—as seems reasonable—that the level of cataloging duplication between the state library and any of the public library systems outside New York City was no higher, then approximately 47% of the state library's cataloging in 1965 was not duplicated in other public libraries in the state. The inclusion of the state library's cataloging for 1965 in a statewide cataloging operation would have increased the number of titles to be cataloged by the center by some 7,500 or some 15% of the total output expected of it for the public library systems alone.

Section 2

Non-Member Libraries

There are 54 public libraries listed in the New York State Education Department publication, Public and Association Libraries Statistics, 1964, which were not members of any of the public library systems. According to A Directory of New York State Public Library Systems, July 1965, also published by the New York State Education Department, nine of these libraries now belong to a system; one other is in the process of joining a system. The remaining 44 libraries range in size of total holdings for 1964 from 2,486 to 238,821. The following table shows the number and holdings of these 44 libraries according to size of individual library holdings in 1964.

Table C-2

NON-MEMBER LIBRARY HOLDINGS—1964

Range of Individual Library Holdings—1964	Number of Libraries		Total 1964 Holdings	
1 - 10,000	17	(39%)	99,394	(10%)
10,001 - 20,000	14	(32)	185,591	(18)
20,001 - 30,000	3	(7)	70,708	(7)
30,001 - 40,000	2	(4)	70,728	(7)
40,001 - 50,000	3	(7)	140,055	(13)
50,001 +	5	(11)	473,532	(45)
	44	(100%)	1,040,008	(100%)

This table shows that libraries with 1964 holdings of 20,000 or less account for 71% of all non-system libraries but only 28% of the holdings of these libraries. Conversely, the libraries with holdings of more than 40,000 represent only 18% of the total number of libraries, and account for about 58% of the total 1964 holdings.

An effort was made to find out to what extent these libraries would be interested in contracting for centralized processing services. If they were interested in such a service, what was the maximum cost they would be willing to pay per item and the maximum time interval they would accept between ordering and receiving the finished product? Five of the largest non-system libraries (all with holdings of over 48,000 in 1964) were contacted by telephone. These five libraries contained about 45% of the 1964 holdings of the 44 non-system libraries. Two libraries with holdings of between 10,000 and 20,000, and two libraries with fewer than 10,000, the only two of the 17 libraries with holdings under 10,000 which had telephones listed, were also contacted. One of the latter two librarians did not answer the questions because she felt she should not speak for the board.

Of the eight libraries answering the questions, two of the large ones and one of the small ones said they would be interested in centralized processing. One of the large libraries would want new books by publication date and all other books within three or four weeks, at the cost of up to $1.50 a copy. The other large library said it would be willing to pay no more than $.80 an item for processing and had no opinion as to how fast the items would have to be delivered. The small library would want the books within two weeks and had no opinion as to a maximum acceptable price.

The five libraries not interested in centralized processing saw no advantages in changing from their present setup either because: 1) they felt they were providing good results; 2) they had the staff to handle their processing needs; 3) they wanted to order books locally; or 4) they felt that the cataloging would not be up to their own standards.

Judging from the relative lack of enthusiasm in the responses of the non-member libraries to the questions about centralized processing, as well as from the sizes of the libraries involved, any processing volume from these libraries—should it be feasible in the proposed system to include processing for such libraries—would be small when compared with the volume which the system as a whole would be handling. The recommended capacity of the proposed preparation centers would be ample to accommodate any likely additional workload from this source.

Section 3

Commercial Processors

In conjunction with The Theodore Stein Company, a letter of general inquiry was sent to all the commercial processors or firms known to be providing commercial processing services. A copy of this letter is Exhibit I at the end of this appendix. Altogether 26 such letters were sent out. In addition two of the commercial processing centers to which letters were sent were also visited by personnel conducting the study.

From the 26 letters sent out, return communications were received from 11 organizations. Of these, two said that the activities they were performing were not of the type we were asking about and so sent no further information. For example, one firm, primarily a publisher, bought all the catalog materials it sent with its books from another firm. The other replied it sold catalog cards only to publishers, none to libraries at all. Two firms were involved only with book catalogs.

Information from the other seven firms responding was, in general, not as complete as desired. Nevertheless it was possible to gain some insights regarding the services offered by the replying firms.

Table C-3 gives information on the various services performed by these companies.

As can be seen most of the companies did not indicate the time elapsed between receipt of order and delivery. The time indicated by the two processors who gave this information is somewhat longer than that of the system processing centers in New York State. As shown in Table A-2 of Appendix A, all but one of the processing centers reported that the normal time from placement of an order by their member libraries to receipt by them of the processed item was eight weeks or less.

Table C-3

INFORMATION ON COMMERCIAL PROCESSORS

Company	Service	Cost	Time
A	Ordering, cataloging, preparation for public, school, college and university, and special libraries;	$.50 - $2.30	8 weeks normal
	also sell cataloging kits	$.25 when book also bought; $.29 without book	—
B	Print and sell catalog cards (9th abridged Dewey only); also sell Bowker processing kits	—	—
C	Cataloging and preparation for high school and junior college libraries	$1.35 - $1.90	—
D	Furnish catalog cards and book pockets with library bound books bought through company	Free with purchase of books	—
E	Kits of catalog materials furnished to public and school libraries	$.29 per kit	—
F	Ordering, cataloging and processing of materials for schools, as well as for some public libraries	$.60 - $1.65	120 days normal
G	Ordering, cataloging, preparation for university, government, public and special libraries	Individually contracted with clients	—

The charges of the commercial processors, in general, appear to be a little less than the total costs for system center processing discussed in Appendix A. The average cost per item in 1964 was $1.81 at the 18 system centers which handled their own processing and reported their costs to the contractor.

As was noted above, visits were also made to two commercial processing centers, among the largest, if not the largest, commercial processors in the country. At the time of the visit both were processing items at a rate of approximately one million a year. The operations at both companies were observed. It was not possible to get information on operating costs at either of these plants. Very general discussions were held with the ranking personnel of one of the operations about the possibility of the firm's handling the processing or part of the processing in a statewide system of the type being considered in this study for the State of New York. It was not possible in these talks to obtain firm price quotations. The main spokesman felt that the specifications and requirements for the proposed system were not sufficiently precise to provide a base for any detailed price quotations. He did, however, estimate that the firm could handle the entire processing for the state at from $.60 to $.70 a volume if:

1. ordering was only from lists;
2. all orders for each list were in by set dates;
3. an average of 100 copies per title was bought;
4. there was a single processing procedure (that is, no "customizing" in cataloging or preparation to meet individual library requirements).

Under such an arrangement, it would be possible to order titles after list deadlines but such orders would bear an additional processing charge per copy ordered.

It is apparent that the commercial processing field is in a period of rapid change. This is due in part to the generally increasing acceptance in library circles of the idea of centralized processing, commercial or other. But more important is the effect of the federal Elementary and Secondary Education Act (1965), and specifically of that Act's Title II, which is concerned in part with the financing of the purchase of materials for school libraries.[1] The processors themselves are expecting and planning for great increases in their business as a result of this law. There is talk in the field that capacities for some firms will be doubled in the near future mainly to meet the increased demand which will develop because of Title II of ESEA. Though purchases under the Act are only just getting underway, there is some intimation that the speed of service of commercial processors may already be adversely affected.

One major publisher, responding at least in part to the developments to be expected under Title II, has decided to start its own processing service, charging for the processing in addition to the cost of the materials themselves. At least to begin with, this publisher will be processing only materials published by it. There are reports of other publishers, individually or in groups, planning to start processing their own titles for libraries. As of late January 1966, there was no definite information that any such additional processing operations are underway.

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[1] This Act is discussed in greater length in Appendix A of the report, Feasibility of School and College Library Processing Through Public Library Systems in New York State, (Nelson Associates, Inc., for the New York State Library, 1966).

THEODORE STEIN
DATA PROCESSING METHODS
400 MADISON AVENUE
NEW YORK, N.Y. 10017
HA 1-1434

Exhibit I

3rd December, 1965

Name and Address
of Processing Firm

Gentlemen:

We are currently engaged in a study of centralized technical processing as it is carried out in the twenty-two library systems of New York State. This study is to evaluate the effectiveness of centralized technical processing and to make recommendations for changes in processing methods, administrative procedures, and the level of centralization. In this study the use of commercial services is under consideration in the following areas: book ordering, physical processing of books, cataloguing, preparation of book-form catalogues to supplement or replace card catalogues.

We would appreciate receiving information about the services which you offer in these areas. Information of the following types would be very useful: numbers of titles and/or books customarily processed in a year, types of libraries served, time lapse involved, charges for the various types of processing. Do you process titles in advance, i.e. in anticipation of orders? Do you receive books in advance of publication date? Do you process non-book materials?

The preparation of book form catalogues is an extremely important factor in this study. If you do such work we would like to have as much information as possible about: prices, type of book catalogue furnished, method (i.e. computer, photographic or other).

In connection with this enquiry we would like you to make particular note of the following:

1. We will not make recommendations about the use of specific companies. We will attempt to completely avoid the use of specific company names, except for inclusions of a list of companies offering such services. The only exception that could conceivably be made would be in a case where a company offered a service so unique that identification of the

specific company was unavoidable. We will state conclusions about the use of commercial services in general. We will discuss costs in terms of average and ranges.

2. Cost is of course one of the most important considerations. We hope you will be able to supply information about contract prices and contract terms in typical situations. We hope that the description of the work carried out for the stated price will be specific enough to be meaningful.

3. We prefer that you send data which is freely and publicly available. However, we will abide by any restrictions which you place upon the use of material, and will treat as confidential anything which you so designate.

4. We realize that it is in your interest that the report comment favourably upon the use of commercial services. We expect that you will try to place your services in as favourable light as possible, and we think it is desirable that you do take this approach.

5. Although we expect you to paint the best possible picture of your services, we hope that you will not send us pure sales brochures. We hope that you will be able to send us a certain amount of meaningful technical information.

For your information, this study is sponsored by the Office of the Assistant Commissioner of Education for Libraries of New York State. We are involved in this study under sub-contract to the firm of Nelson Associates, New York, New York.

Please feel free to contact us for any clarification or additional information.

Very truly yours,

PROCESSING SYSTEM CONSIDERATIONS

Section 1

Acquisition, Cataloging, Preparation and Delivery

Appendix A contains the results of research conducted for this study concerning the current centralized processing operations of the state's public library systems. This appendix contains the results of research related to possible alternative methods of performing those same processing functions. The alternatives studied are varied, as will be seen, and—as required by the scope of the study—specifically include a detailed study of the book catalog and its potential use in the public library systems of New York State.

For this analysis, the processing cycle has been divided into four main elements: acquisition, cataloging, preparation and delivery. These four elements are considered in this section. The next section deals with the catalogs themselves.

It should be noted here that Exhibit I to this appendix, "Statistical Analysis of Library Processing Costs," comments on some apparent statistical relationships between number of items processed and cost per item processed derived from data on 16 public library systems of the state in 1964. The processing elements dealt with, both singly and together, are acquisition, cataloging and preparation. In brief, the exhibit suggests that the statistics indicate that for these elements, at least, the larger processing centers operate more efficiently. That finding is a significant factor in the analysis below of the various processing elements.

ACQUISITION

Three alternatives for acquisition activities are considered in this section: 1) a continuation of present arrangements; 2) centralization of activities into three centers using present conventional methods; and 3) centralization of activities into one center using electronic data processing equipment where appropriate.

Table D-1 gives total cost estimates for annual operating costs for the three alternatives.

Table D-1

ESTIMATED ANNUAL OPERATING COSTS
OF SELECTED ACQUISITION OPERATIONS
TO PROCESS 2,000,000 ITEMS

Operation	Operating Costs*
1. Present arrangements	$930,000
2. Three centers upstate, New York City as is: conventional methods	880,000
3. One center entire state: with EDP	790,000

*Rounded to the nearest $10,000.

The estimated costs in the above table were arrived at in the following ways: the "Present arrangements" costs are based on cost information gathered from system processing operations in the course of this study and of the companion study of the New York City systems; the costs for Operation 2 are based on the same cost information mentioned above, but the estimates have been made on the assumption that per unit costs decline as volume increases. The bases for this assumption are explained in Exhibit I to this appendix. Thus, it has been assumed that average cost per item under Operation 2 would be $.44. The costs for Operation 3 are based on estimates, relying on appropriate and comparable figures, which take into account the various ways in which the elements of the acquisition activities would be organized under the proposed plan. The machine elements of this plan are described in Appendix E below. The few elements of acquisition not handled by the EDP equipment are handled in the orthodox way under the proposed system.

It is not expected that the time required for performing the acquisition functions will differ substantially under the three operations, except for one peripheral consideration. It seems likely that the fewer the number of centers the faster may be the service which the centers would be able to get from the various vendors. Such an improvement in service would be a result of the centers' having greater leverage on the vendors because of the greater volume of purchases compared to that of the centers as now constituted.

Similarly, in regard to cost of books purchased, it is not unlikely that the larger centers might be able to get larger discounts from the vendors because of increased volume. In the course of the study, discussions were held with publishers regarding both these points. The results of these discussions were mixed and inconclusive. As far as service was concerned, the official attitude was that every customer got only the best service. Unofficially it was admitted that the bigger customers might get slightly better service, but that, if so, the actual difference in time would not be great. The publisher's reaction was divided regarding greater discounts for greater purchases. One policy, staunchly advanced, was that the firm had one, printed, hard and fast set of discounts, and that the discount schedule was so constructed that a relatively small processing center would have enough volume to rate the highest possible discount. In contrast, another large publisher indicated that it might be possible for such a center to negotiate for a higher discount. It can be seen that such an increased discount could represent more than a miniscule saving were it possible to apply it to all 2,000,000 items purchased by the system. Assuming an average price after discount of $4.00 per item and a present average discount of 40%, it can be seen that each percentage point increase in the average discount would mean a savings of $140,000 paid for the materials themselves. (Average price per item before discount: $6.67; 1% of $6.67: $.07; $.07 saving for each of 2,000,000 items equals $140,000.) In the course of the study, there were a number of indications that some large purchasers were getting considerably larger discounts than the 40% top generally received by the most fortunate library purchasers. It was not possible, however, to substantiate any of these reports.

CATALOGING

Two alternatives are considered for the cataloging of the titles handled by the state's public library systems. They are: 1) a continuation of present arrangements; and 2) one center for the state with supporting EDP equipment.

Table D-2 gives total cost estimates for annual operating costs for the two alternatives. The costs for Operation 1 are based on information gathered during the course of this study and the related study of the New York City systems. The costs for Operation 2 are based on estimates made in consultation with Professor Tauber, and on the expected costs of EDP equipment. This estimate also includes an allowance for the additional cataloging effort which would be involved in classifying some 21,000 titles both by Dewey and Library of Congress classification systems.

Table D-2

ESTIMATED ANNUAL OPERATING COSTS OF SELECTED CATALOGING OPERATIONS

Operation	Operating Costs*	Number of Titles Cataloged
1. Present arrangements	$1,300,000	262,000
2. One center entire state		45,000
Cataloging effort	$290,000	
EDP costs	120,000	
Total	$410,000	

*Rounded to the nearest $10,000.

The effect on costs of centralizing the cataloging of the state at one center is striking. Great savings are achievable through centralization itself and result from the cessation of the cataloging of the same titles at a number of different places in the state. (But it is probably not true that if the EDP equipment were not used, cataloging for the state could still be centralized for the cost indicated on Table D-2 for the cataloging effort alone. The EDP equipment substitutes for a large amount of paper handling which would otherwise be necessary.)

Also, it appears that only with computer equipment is it possible to economically produce book catalogs. Without EDP equipment the cataloging center would presumably produce catalog cards. It is logical to expect that the interfiling of these cards with those already held by libraries around the state would present problems in some libraries. An alternative solution to this particular problem would be for the libraries to file separately the catalog cards produced by a state center, but this would result in additional expense at the libraries and require the patron to look in two card catalogs for catalog information. In addition to the problem of meshing center-produced cards, if the center made cards only, the possibility would be lost of inexpensively informing patrons through the book catalog of resources beyond their individual libraries.

Research in connection with this study indicates that a centralization of cataloging activity runs a danger of slowing the time which it takes to catalog a title. A relationship was detected between number of items processed and length of time from order by the library until receipt of item. The tendency appeared to be for this length of time to be longer the more items were processed at the center through which the item came. A study of the information gathered on bottlenecks and the backlogs at the various processing centers indicates that up to 90% of the items reported backlogged at the various centers were backlogged in the cataloging segment of the processing cycle. It would seem that if further centralization of cataloging is attempted, the greatest possible effort should be made to prevent such further centralization resulting in bigger cataloging backlogs and slower delivery of materials.

It should be noted that should cataloging be centralized, another apparent advantage in addition to the savings involved would be the opportunity to have uniform cataloging of high quality throughout the state. To judge from the responses to the member library questionnaires discussed in Appendix B, many of the libraries appear to feel that the present arrangement of system operation has helped raise the level of catalog content in many libraries. It would seem reasonable to expect some additional advances in this element of library service if the cataloging function were further centralized.

PREPARATION

Two alternatives for preparation activities are considered: 1) present arrangements; and 2) three centers upstate, New York City as is. Table D-3 gives estimates of annual operating costs for these alternatives.

Table D-3

ESTIMATED ANNUAL OPERATING COSTS OF SELECTED PREPARATION OPERATIONS TO PROCESS 2,000,000 ITEMS

Operation	Operating Costs*
1. Present arrangements	$830,000
2. Three centers upstate New York City as is (one catalog center for state)	860,000

*Rounded to the nearest $10,000.

The estimate for Operation 2 includes an allowance to cover the mailing of book pockets, catalog cards, and so on to the preparation centers from the catalog center, as well as an allowance to cover the cost of additional matching of materials from the catalog center and vendors, and the general handling of communications between the catalog and preparation centers.

It is not expected that the employment of EDP equipment in the processing cycle would have much effect on the preparation element of the cycle. This expectation is reflected in the estimated costs in Table D-3 above. If EDP equipment is employed, the equipment would be involved in the printing of labels, catalog and shelf-list cards, and process control sheets, all of which would be used in the preparation element. Beyond that preparation would be done about as it is now, since there appears to be no equipment which would be economically feasible at higher volume levels in preparation that is not already employed at the processing centers.

In constructing the estimate for Operation 2 a small decrease in the cost per item prepared has been allowed for. The cost per item assumed (aside from the special allowances referred to above) for Operation 2 is $.43 an item. In 1964 the average per item cost for the preparation done in the public library processing centers in the state was $.44.

It should be noted that though the statistical analysis in Exhibit I of this appendix gives indications that the cost per item for preparation may continue to decline above a volume of about 400, 000 items annually, no cost figures were found in the research for this study which either support or disprove this hypothesis. Little actual experience exists at volumes above 400, 000 items annually and where such experience exists (at some of the larger commercial processors and in a few libraries outside New York State) detailed cost figures were not available broken down by the processing elements used in this study. Actual cost experience up to 400, 000 items annually, as Exhibit I indicates, does suggest that preparation costs per item apparently decline as the volume increases.

There is also no decisive evidence from the research that higher levels of volume do or do not consistently result in slower preparation cycle times, although, as has been noted, there is an indication that delivery slows down in some cases when volume rises. It appears that the main reason for this holdup is the inability of cataloging departments to keep the materials moving. Thus, theoretically, what operating experience there is to draw upon indicates no firm evidence that a preparation center could not handle 2, 000, 000 items a year. Undeniably, however, this would represent a major innovation in preparation activity, and the possibility that it might result in a catastrophic and unmoving tangle of men and materials cannot be be ruled out on the basis of presently available information. The information on which to base a cost estimate for an operation handling 2, 000, 000 items annually was so sketchy and uncertain that no attempt was made to arrive at such an estimate.

DELIVERY

Five alternative methods of delivery are studied in this section. The methods are: mail, parcel service, express company, commercial trucking, and trucks operated by the preparation centers. Since it could be expected that the delivery method selected would depend to a great extent on the decisions reached in regard to the other processing segments, a somewhat different tabular analysis is employed in this section than was used above.

Table D-4 shows the five delivery methods measured by the criteria of time and cost if they were serving three upstate preparation centers. No calculations have been made concerning the three

New York City systems because it has been assumed, taking into consideration the short distances and the delivery volume involved, that it will always be most desirable from the point of both time and cost to deliver processed materials in New York City by trucks owned by the three libraries or preparation centers.

Table D-4

COMPARISON DELIVERY METHODS IF THREE PREPARATION CENTERS

Operation	Time (in days)	Cost Total Upstate*
1. Mail	2 - 4	$ 110,000
2. Parcel service	1	220,000
3. Express company	3 - 5	910,000
4. Commercial trucking	1	1,110,000
5. Own trucks	3	130,000

*Rounded to the nearest $10,000.

Speed estimates for parcel service, express company and commercial trucking are based on what seem to be reasonable representations made by the carriers involved. The time estimate for mail is based on the results of statewide sample mailings conducted in the course of research for the study. The results of these sample mailings are described in detail in Exhibit II at the end of this appendix. They indicate that a preparation center serving one-third of the state could reasonably expect books it sends to be delivered in general in two to four days. The estimates for "own trucks" assumes that each library served by the preparation center would receive shipments at least once a week, with larger libraries receiving shipments more often. Thus, books going to some libraries might in some cases be held as long as six days at the center after preparation before being delivered to the ordering library. Allowance has been made in the table for this waiting time by assuming that, on the average, a book would be held two days before being shipped. With the allowance of an additional day for the delivery itself, the three-day speed estimate for own trucks was arrived at.

In estimating costs, assumptions have been made concerning the number and size of packages which would be sent by the centers. The same assumptions have been used in estimating the costs for each of the alternatives. The assumptions are: 1) each center is preparing 400,000 items; 2) shipments are made each day of all materials ready for shipping that day, except when shipping is done by own trucks, in which case a shipping schedule is followed ensuring deliveries to all libraries at least once a week; 3) the average package contains 4.25 items and weighs six pounds. Mail costs are based on current rates; parcel service, express company and commercial trucking on appropriate current rates furnished by the various carriers; and own trucks on information gathered from various processing centers in the course of the study, adjusted to reflect the greater distances that would be involved. The figures for Operations 1 - 4 also include estimates of the cost (direct and overhead) for the wrapping of packages. The figure for Operation 1 also includes an estimate for insurance.

It is clear from the cost estimates developed for delivery expense, as shown in Table D-4, that it would not be economic to ship materials from the three preparation centers by a commercial trucking firm or express company. It also appears that shipping by parcel service would be uneconomic. Because of the closeness of the totals for mailing and "own trucks" one or the other might be chosen for reasons other than cost.

Section 2

Catalogs

BOOK CATALOGS VERSUS CARD CATALOGS

In considering the possible forms of catalogs which might be recommended in connection with this study, particular attention was paid to the book catalog. This form of catalog was studied, and its apparent advantages and disadvantages in relation to the card catalog determined.

The advantages appear to be:

1. The book catalog is easier to use. The ability to scan a great number of items presented on the book pages appears to offer substantial advantages. Also certain tests have shown that the look-up time for an item in a book catalog is shorter than that of a card catalog.

2. Where copying equipment is available it is easier to copy pages of the book catalog. By means of Xerox equipment a catalog page containing desired references can be quickly copied.

3. Deterioration problems are eliminated. The periodic reprinting of the catalogs provides a continual refreshing of the catalog.

4. Consistent form for all entries is obtainable. Because of the periodic reprinting, if a change in format is decided upon, all entries new and old will be printed in the same format.

5. It apparently saves staff time. Catalog card filing and maintenance is eliminated. Special copies of the catalog can be made available for staff use only and conveniently located to save walking to and from the card catalog.

6. Less space is required for a book catalog than for a card catalog.

7. It is easier to distribute copies of a book catalog which is a union catalog than it is of a union catalog in card form.

8. A widely distributed union catalog in book form should conceivably have some value as a selection tool for library staffs, as well as make available to library patrons—assuming good interlibrary loan provisions—resources beyond their individual libraries.

The disadvantages appear to be:

1. For most material there are two places to look for information, the basic catalog and the supplement, rather than one. In some situations, for material still in the old card catalog or after the book catalog has been going some decades, there may be even more than two places to look.

2. In a book catalog, which for economy's sake does not have full entries in each of its sections, a double look-up may sometimes be required to obtain full information. This appears not to be an important disadvantage. The material likely to be omitted in the condensation is mainly of interest to the staff rather than to the public, and the staff is usually working with the main entry, which would normally be the entry with full information.

An additional disadvantage results if the book catalog is a union catalog.

3. If a reader is interested only in titles held at a specific library, then the additional titles shown in the union catalog are a problem for him. Not only may he have to scan a lot of titles which are not held at his library, but in some cases he will not immediately be able to tell—as he now can with a card catalog—whether a book is owned by his library, but will have to check further.

COST OF BOOK CATALOG PRODUCTION

The costs involved in producing a book catalog were also studied. The cost of computer maintainance of the catalog files is included in the overall computer systems cost. The cost of catalog input preparations is included in the overall input preparation cost. (This is actually the major portion.) The costs discussed here are the costs directly attributed to use of a book form of catalog. These are the costs for original printing on the computer printer and for photography, platemaking, offset printing, collating, and binding.

It was assumed that the master page would be computer printed on 14x18 sheets and photo-reduced to 8-1/2x11 size. Direct printing of paper multilith masters on the computer printer was found to be uneconomical. If the printing is done on 8-1/2x11 masters, then, because there is no photo reduction, there will be many more pages, and the saving in platemaking cost will be more than offset by increased printing costs. If the printing is done on large masters then there will be difficulty in printing on standard presses. Also it will not be possible to achieve the economies of printing two or more pages at a time, which can be done on standard presses.

A constant volume catalog showing ten years of holding was assumed. Costs are given for two periods. There is the buildup period in which the catalog is growing from zero to ten years holdings. There is the constant volume period in which, at each recumulation of the main catalog, old entries are deleted to compensate for new entries added. The following characteristics were assumed for the catalog:

1. Two column format.
2. Thirty full entries per page, 60 condensed entries.
3. For each item, on the average, one full main entry and three condensed added entries.
4. Monthly supplements.
5. Main catalog reprintings at the optimum intervals.

Results of these calculations for the statewide catalog, as well as the set of regional catalogs, are set out in Table D-5.

STATEWIDE BOOK CATALOG VARIATIONS

Table D-6 shows how costs are affected for the statewide catalog costed in Table D-5 when various of the assumptions upon which the costs in Table D-5 were based are modified.

Except as noted, the assumptions relating to the various catalogs are the same as for the catalog costed in Table D-5; the variations are not cumulative. The assumptions regarding each variation are changed only so far as indicated in the left-hand column for the individual variations. An explanation of the nature of each of these variations is given in the following discussions of book catalog design and organization.

Table D-5

ESTIMATE OF BOOK CATALOG COSTS

[All Costs in Thousands of Dollars; Computer Print Time in One-Shift Weeks (40 Hours)]

			Buildup Period	Constant Volume Period			
Catalog	Thousand Titles Per Year	Copies	1/10 of Total Reproduction Cost	Reproduction Cost	Thousand Pages Per Year	Computer Print Time Per Year	Computer Print Cost at .25 Per Page
			$	$			$
Statewide	45	1000	181	259	61	7.5	15
Region 1	12	100	23	33	16	2.0	4
Region 2	25	100	47	68	34	4.2	8.5
Region 3	12	100	23	33	16	2.0	4
Region 4	15	150	30	44	20	2.5	5
Region 5	15	200	33	47	20	2.5	5
Region 6	13	150	26	37	17.5	2.2	4.4
Region 7	12	175	26	36	16	2.0	4
Region 8	10	175	22	30	13.5	1.7	3.4
Region 9	15	100	28	40	20	2.5	5
Total All Regions			258	368	173	21.6	43.3
Total All Catalogs			439	627	234	29.1	58.3

Notes:

Reproduction Cost: This includes photography, platemaking, printing, collating, and binding.

Buildup Period: The cost given is the total cost averaged over 10 years. However, the cost is not uniformly distributed. It will be low at the outset, and high in the last year.

Computer Print Cost: This is shown to give some idea of the relationship to reproduction cost. It does not represent an added cost, since this computer time is included in the total operating cost for the computer installation.

Table D-6

COST MODIFICATIONS FOR STATEWIDE BOOK CATALOG VARIATIONS

(All Costs in Thousands of Dollars)

	Cost per Year	% Change
1. Original catalog	$259	0
2. Fifteen year constant volume	316	+22
3. Twenty year constant volume	364	+40
4. Fifty per page full, 100 per page condensed	155	-40
5. One full main entry and 4 condensed added entries	310	+20
6. Variation 4 and variation 5	190	-27
7. All full entries	415	+60
8. Supplement every 2 months	185	-28
9. Variation 3 and variation 8	259	0
10. Commercial method (see page 17)	207	-20

BOOK CATALOG DESIGN AND ORGANIZATION

There are four important factors which can be controlled by the catalog designer. These are:

1. The interval between catalog supplements.
2. The format of the supplement. It is possible to use a book catalog with either a book or a card supplement.
3. The density at which entries are printed on the catalog page.
4. Maximum size of the main catalog.

If a book form supplement is used, then once the interval between supplements and the size of the main catalog are determined, the interval between main catalog issuance to produce a minimum cost is mathematically determined. If a card form supplement is used, the interval between main catalogs is another facotr which can be controlled by the designer. The longer the interval, the lower the cost.

The factors above determine the cost of a single catalog; equally important in a statewide system is the number of catalogs that must be produced and the number of new titles that will appear in these catalogs each year. These are in turn determined by a fifth factor, namely, the way in which the libraries are grouped together in union catalogs. Each of these five factors is discussed below.

Interval Between Catalog Supplements

The shorter the interval between catalog supplements the greater the cost and the greater the problem in meeting production deadlines. On the other hand a long interval results in poor service because of the great time lag between cataloging of a book and availability of catalog information to the public. The interval that should be taken is the longest one that is consistent with good public service. One month seems to be the longest such interval tolerable for regular public library use.

If we assume a two-week time period for production and distribution of the catalog, then in order to have a catalog by June 1st a cut-off date for new data must be established some time in the middle of May and catalog printing started, Thus when the monthly catalog supplement is first received it is a maximum of six weeks old, a minimum of two weeks old, with an average of four weeks.

Form of the Supplement

It is possible to consider a catalog scheme in which there is a main catalog in book form and the supplement is in card form. At each recompilation of the main catalog, the cards accumulated between cumulations would be discarded and a new card supplement started. This approach is considerably cheaper than the use of a book-form supplement. Furthermore a part of the advantage of the book-form supplement is retained. Although there is a card filing task on this approach, it is less time consuming than card filing using a card catalog only, since the size of the catalog never exceeds the acquisition volume of one main catalog cycle. Because of the smaller card catalog the look-up time in this catalog is also shorter. In a small library under such an arrangement the card catalog might never be larger than two or three drawers.

Page Density of Entries in the Book Catalog

With any large listing which is frequently reprinted, the number of entries that can be printed per page is a crucial factor in determining the cost of the listing. People who prepare such listings for various commercial purposes, have long known this and put forth a great deal of effort in analyzing typography, page format and entry format in order to achieve maximum density, while maintaining a reasonable level of readability. Abbreviations and other expedients are used to achieve high density. The telephone book is one example of this type of listing. The importance of this consideration is now becoming apparent in the preparation of library book-form catalogs. A great deal of additional work has yet to be done in this area.

The factors affecting the page density of entries are the following:

1. The amount of information in an entry;
2. The type styles used;
3. The entry format;
4. The page format;
5. The type size, which depends both upon the original type size and the amount of photo-reduction.

One method of reducing costs by controlling the amount of information in an entry is to vary the amount of information with the type of entry. Further compression can be achieved by successive re-reducing of the amount of information in the older entries as the years go by, but always providing, in some way, access to the original full entry.

The proper use of typography in printed book catalogs has not been well enough explored. Book catalogs in current use do not make effective enough use of type style. This is partly because of limitations of type styles available, and partly because not enough experimentation has been done on this subject. By proper use of bold face and other contrasting type styles, it should be possible to pack entries very closely, eliminate white space, and still retain good readability. Part of this problem is now being overcome because of the availability of new computer-actuated printing devices which can print in a variety of type styles.

After a study of computer-produced book catalogs in current use, it appears that a page density of 30 per page for full entries and 60 per page for added entries is definitely achievable. With attention to the factors enumerated above, a density of 50 per page for full entries and 100 per page for added entries should be achievable.

One company produces a type of computer-printed book catalog in which the author, title and subject entries are all condensed. Full information is shown in a register to which entries are added in order of acquisition. A logical look-up in the register cannot be done directly. However, every condensed catalog entry has a cross reference to the register, so that the full information can always be obtained with a second look-up. This is one of the least expensive methods of producing a catalog, since the register entries are printed only once. They are not reprinted or recumulation. As new pages of register entries are prepared, they are added to the end of the volume containing the register entries. As compared to a catalog showing full entries everywhere, this is extremely inexpensive. As compared to the catalog proposed here it is about 20% less expensive. It is felt, however, that the added convenience of having the full information at least at the main entry portion of the catalog is a warranted additional cost.

Size of the Main Catalog

Unlimited cumulation and reprinting of the main catalog cannot be tolerated. Some method of setting a limit to the size which this catalog will reach, must be adopted. This is a change from the traditional notion of the ever-expanding catalog. One method would be to proceed with successive ten-year cumulations. This would mean that older material would require one or more additional look-ups. However, the majority of the material in active use would be represented by the current main catalog.

An even less expensive method would be to retire a catalog after ten years, and start over again with fresh materials in the new ten-year catalog, retaining none of the material in the older catalog. This would make the new catalog of much less use during the first few years, since it would show only a few years' holdings and there would be constant reference to the previous catalog. Thus it would seem wiser to always show the previous ten years' holdings in the current catalog, and in each new cumulation drop approximately as many entries as are added, keeping the size of the catalog roughly constant. The dropped entries would not be lost, however. They would be available for look-up in the cumulations just previous to the new cumulation. As an additional feature, it would be possible to recumulate the second ten-year catalog together with the first ten-year catalog at the end of 20 years, to produce a 20-year catalog. This cost spread over the 20-year period would not be unreasonable.

By subjecting the older entries in the catalog to greater compression it is possible to produce a catalog showing 20 years of holdings, without as much of an increase in cost as is shown in the catalog cost figures for a 20-year catalog using 30 entries per page for main entries and 60 for condensed. On this scheme, the catalog for the first ten years would be cumulated as described in the proposal here. In the second ten years, each time new entries were added in a recompilation of the main catalog, the old entries would not be dropped but would be reduced to one line in length and would carry with them a reference to the full entry in the previous ten-year catalog. At the end of 20 years, this second catalog would contain 20 years of entries with the oldest ten years highly compressed. It would then be economical to produce a 20-year catalog with all entries shown in their original length and start on a new cumulation which would retain 20 years of entries, with the oldest ten years in single line form.

At each compilation another group of entries would be reduced to single line form and the oldest group of single line entries would be dropped. The group dropped off would, of course, still be represented in the first 20-year catalog.

Methods of Grouping Libraries in a Union Catalog

There are two bases upon which libraries are generally grouped together for the preparation of union catalogs. The first is a grouping based upon similarity of collections. The second is a grouping based upon the existence of strong interlibrary loan arrangements among the members of the group. This second method depends upon organizational arrangements and these in turn are usually on a geographic basis.

The first method should be generally more economical. This is because there should be a greater overlap of titles among the group of libraries of similar type. The greater the overlap of titles, the fewer the number of pages required for the catalog and the lower the cost. For instance, suppose that there were no overlap among the group of libraries represented in the union catalog; then the number of pages required to print the catalog would be the sum of the number of pages required to print separate library catalogs and there would be no savings as compared to the printing of separate library catalogs. With the first method it is also more likely that each of the libraries represented in the catalog will actually hold a large fraction of the items in the catalog. Thus it is less cumbersome to use the union catalog as a catalog of the library's own collection. The second method is of greater value if the principal use of the union book catalog is to facilitate interlibrary loan.

An application of the first method worth considering is the following; group libraries of the state, in accordance with the size of their collections. Prepare two catalogs to supplement the statewide catalog. One would be a union catalog of holdings of all libraries that have total holdings below a certain lower limit. This would be the small library catalog. Another would be a union catalog of all the libraries not represented in the small library catalog and whose holdings are not marked in the statewide catalog. This would be the medium-sized library catalog. Whereas the statewide catalog might be considered too cumbersome for general use at medium and small libraries, it seems likely that the medium library and small library catalogs would not be too large when compared with the size of the collections with which they would be used. In the medium-sized library and small library catalogs, the holdings of only the 20 largest libraries would be marked directly. However, conceivably, many other libraries would be willing to use the catalog with shelf-list cards as a replacement for their card catalogs. In this fashion total coverage would be provided with three different catalogs rather than with the larger number of catalogs required by the regional scheme. It is true that each of these three catalogs would require a large number of copies. However, it is always cheaper to print many copies of a few catalogs than to print fewer copies of many catalogs.

HOLDINGS INFORMATION IN BOOK CATALOGS

The following problems must be dealt with if a union catalog is to be used for several libraries and the holdings of each library are to be marked in the catalog:

1. There is a limit to the number of holdings symbols which can be shown without unreasonably increasing the cost and decreasing the readability of a book catalog;

2. Because the catalog is issued as a main catalog and supplement, and the main catalog is required infrequently, a large volume of unmarked new holdings will accumulate between issues of the main catalog;

3. If, in order to minimize printing cost, holdings are shown at only one catalog entry, there will often be inconvenient double look-up to determine holdings;

4. A well organized reporting scheme is required to assure that the holdings information is accurate and up-to-date.

Each of these problems is discussed below:

Limitation of Symbols

There is no available experience on the maximum number of symbols that can be conveniently used to show holdings. For estimating purposes in this report, 20 has been used. With a two-column format on an 8-1/2x11 page, about 20 symbols can be placed across one line of a column with a spacing that gives reasonable readability. A second line of symbols would increase printing costs. If a full additional 20 symbols were utilized on the second line, this increase might be more than counterbalanced by savings from replacing card catalogs in the additional libraries. However, readability and time taken to locate symbols would become a problem when there were so many of them. On balance, it seems wiser to take 20 as the limit.

Various schemes can be used to increase the libraries represented without increasing the space for symbols. For instance:

1. The symbols, when underlined, can represent libraries which do not hold the title, rather than libraries which hold it. Depending upon whether more libraries hold or do not hold the title, the computer can decide whether to print plain or underlined symbols. In this way, 40 libraries could be represented with a maximum of 20 symbols printed at any one time.

2. Special coding schemes can be designed in which the position of the symbol on the line, as well as the type of symbol appearing, indicate which library holds the item. In this way, considerably more than 40 libraries could be represented using 20 printing positions.

The second scheme would be rather difficult for the general public to use. The first scheme would not be as difficult as the second. However, in dealing with the general public it appears desirable to avoid even this much complexity.

Changes of Holdings Information in the Main Catalog

Undoubtedly, there will be many items appearing in a new issue of the main catalog which will have been ordered by only a few of the libraries by the end of the catalog period. At the beginning of the new catalog period, other libraries will be ordering these items and their holdings will not be reflected in the catalog. To a lesser extent this will continue throughout the catalog period. The problems thus raised are the following:

1. In terms of finding a single source for an item, there is no very serious problem. At least one source will always be shown. Several alternate sources may be

missing but this will probably not be very important.

2. A more serious problem arises in the case where the library staff is using the book catalog to find out about the library's own holdings. There may be important reasons to know whether or not an item is currently held at that specific library.

There are three methods by which the holdings information in the main catalog could be updated during the year. These are:

1. Any time that a change in item holdings occurs, that item could be listed in the supplement with the new updated holdings information even though it is already listed in the main catalog. The disadvantage is that some items would be listed in both the supplement and main catalog while for most items, users will be accustomed to the situation where the item is only in one source. Thus having found a listing in the main catalog, there would always be some uncertainty about whether or not there might be some emendation in the supplement.

2. A specific holdings supplement could be published showing, by page and line number of the main catalog, where additional holdings had occurred and what the additions where.

3. Changes to the main catalog could be made manually.

By and large it appears that the incomplete holdings information in the main catalog would not be a serious obstacle to the public use of the catalog. Staff use seems to be the more serious problem. Therefore the best solution might be alternative #3. The center producing book catalogs could also produce lists which would allow individual libraries to update one master copy of the catalog. If complete holdings information is important to a public user, he can be given access to the master copy or a staff member can obtain the information for him.

Showing Holdings at Only One Entry

To show holdings at every entry means an extra line of print on every added entry. This could conceivably increase the catalog production cost by about 20%. With no experience to draw on, it is of course difficult to judge whether this increased cost is warranted by the increased convenience. It does appear however, that for very many uses of the catalog, holdings information will not be important. Where it is important, the additional look-up for holdings would not appear to be too great an inconvenience.

Method of Reporting Library Holdings

Since the proposed system includes ordering as well as cataloging, the problem of reporting holdings is considerably alleviated. The majority of information about holding changes should be directly available from ordering information. When acquisitions are not made through the state center, this center must be notified of the acquisition. It is difficulty in obtaining reliable reporting of this kind that causes inaccuracy in union catalogs. To overcome this problem, there must be some element which provides great incentive for reporting acquisitions which are not centrally ordered. This incentive will exist if all libraries represented in the statewide catalog agree to rely completely on the state center for catalog information, even if they do not order everything from the state center.

If this is done, then a library which uses a book catalog as the library's own catalog will be highly motivated to report acquisitions to the state center, since failure to do so will result in errors in the catalog which the library is using as its own catalog. If a library continues to use a card catalog, but relies upon the state center for cards, then the request for cards serves as notice of acquisition.

The question of deletions remains something of a problem. The state cataloging center would have to rely upon conscientious reporting by libraries for this information. If the libraries failed to report, the catalog would be in error. Deletions which occur during the year, would of course remain in the main catalog and would not be dealt with until the following issue. The problem is similar to that of holdings' changes. It should not, however, be very important. There is certainly considerable leeway about the actual time at which a library physically removes a book from its collection and it should be possible to time this close to the next issuance of a main catalog.

Exhibit I

STATISTICAL ANALYSIS OF LIBRARY PROCESSING COSTS[1]

INTRODUCTION

The purpose of statistical cost analysis is to determine empirically cost-output relationships. The methods seek to answer questions about cost behavior in relation to changes in the level of output or workload. Accordingly, the purpose of this study is to find out how certain library processing costs—acquisition, cataloging and preparation—vary with changes in the level of output, i. e., with changes in the quantity of material purchased or items processed.

Using statistical techniques of regression analysis,[2] the nature and behavior of processing cost functions will be estimated. The fundamental question to be answered by the analysis is whether marginal processing costs increase, decrease, or are constant as output or workload increases. Marginal costs are sometimes called the "incremental" costs associated with additional units of work. The behavior of marginal costs is of great importance in cost analysis because it determines whether one can operate more or less efficiently, i.e., at decreasing or increasing additional costs, as output increases. It is necessary, therefore, to determine the behavior of processing cost functions in order to predict the effect on processing costs of changes in the level of output or workload of library processing centers.

COST FUNCTIONS

Statistical costing methods consist of testing hypotheses or tentative assumptions made about the behavior of costs. Mathematical models are used by economists and statisticians to formalize alternative hypotheses about cost functions. The mathematical model states a general relationship between costs and output in the form of an equation. Different equations therefore represent different general cost relationships. Thus, the hypothesis that marginal costs are constant takes the form of the simple linear equation, $Y = a + bX$, where Y is estimated total costs at a given level of output, X. "a" and "b" are constants, determined by methods of regression analysis. When this type of mathematical model is used in statistical cost analysis, the constant "b" represents marginal costs. The constant "a" is difficult to define with precision. In some cases "a" represents fixed costs. In other cases "a" has no meaning. In this study, the value of "a" has significance only insofar as it is used to estimate the least efficient size of a processing center.[1]

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[1] This exhibit was prepared by Richard P. Brief, Assistant Professor of Business Statistics, New York University.

[2] For a discussion of regression analysis, see M. Ezekiel and K. Fox, Methods of Correlation and Regression Analysis, J. Wiley & Sons, Inc., New York, 1959. The subject of statistical cost analysis is dealt with in J. Johnston, Statistical Cost Analysis, McGraw-Hill, New York, 1960.

The hypothesis that marginal costs change as the level of output is varied takes the form of the quadratic equation, $Y = a + bX + cX^2$. The "cX^2" term of this equation shows that costs do not behave in a linear manner. Marginal costs for the curvilinear cost function equal $b + 2cX$. Thus, if "c" is positive, marginal costs increase as output increases. If "c" is negative, marginal costs decrease with increased output.

Consider the following cost functions:

1. $Y = 5 + 2X$ $a = 5 \quad b = 2$
2. $Y = 5 + 2X + .01X^2$ $a = 5 \quad b = 2 \quad c = .01$
3. $Y = 5 + 2X - .01X^2$ $a = 5 \quad b = 2 \quad c = -.01$

Total costs, average or unit costs, and marginal costs are shown below for each cost function at levels of output equal to 50 and 100 units, i. e., $X = 50$; $X = 100$.

Cost Function	Total Costs		Average or Unit Costs		Marginal Costs	
	X=50	X=100	X=50	X=100	X=50	X=100
1. $Y = 5 + 2X$	$105	$205	$2.10	$2.05	$2.00	$2.00
2. $Y = 5 + 2X + .01X^2$	130	305	2.60	3.05	3.00	4.00
3. $Y = 5 + 2X - .01X^2$	80	105	1.60	1.05	1.00	0

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[1] See note on page 28.

Marginal costs are constant in equation #1, increasing in equation #2, and decreasing in equation #3. As output expands from 50 to 100 units average costs decrease from \$1.60 to \$1.05 under cost conditions as shown by equation #3. On the other hand, average costs increase from \$2.60 to \$3.05 under cost conditions depicted by equation #2, i.e., increasing marginal costs. Average costs remain virtually constant when marginal costs are constant (equation #1).

STATISTICAL ANALYSIS OF COST FUNCTIONS

Two hypotheses about library processing cost functions were tested statistically: 1) library cost functions are linear (marginal costs are constant); and 2) library cost functions are curvilinear (marginal costs are either increasing or decreasing). The former is represented by a straight line equation, $Y = a + bX$; the latter by a curvilinear equation, $Y = a + bX + cX^2$.

After computing linear and curvilinear cost functions for the various components of library processing costs, statistical measures of significance were used to determine which cost function best describes the behavior of library processing costs. These statistical measures of significance will be discussed presently.

The statistical analysis was applied to data for 16 processing centers. Insufficient data was available for those processing centers not included in the analysis. The processing centers used in this analysis are shown below:

1. Southern Tier
2. Southern Adirondack
3. Mohawk Valley
4. Upper Hudson
5. Finger Lakes
6. Four County
7. Mid-York
8. Nioga
9. Onondaga
10. Westchester
11. Nassau
12. Suffolk
13. Buffalo and Erie
14. Brooklyn
15. Queens
16. New York City

The results of the statistical analysis are presented in Exhibit Table D-7.

SUMMARY OF STATISTICAL FINDINGS

(measures of costs and workloads in units of 1,000)

Model	Y	X	Cost Function	Estimates of			Measures of Statistical Significance		
	Cost Component	Measure of Work		a	b	c	F-value:b	F-value:c	R^2
I - A	Acquisition Cost	Material Purchased	$Y = a+bX$	5.75	.3647	—	84.3	—	.858
I - B	" "	" "	$Y = a+bX+cX^2$	−16.75	.8167	−.0009	47.0	15.2	.934
I - A(1)[a]	" "	" "	$Y = a+bX$	1.85	.3573	—	273.7	—	.955
I - B(1)[a]	" "	" "	$Y = a+bX+cX^2$	−11.2	.6390	−.0006	96.9	19.7	.983
II - A	Preparation Costs	Items Processed	$Y = a+bX$	.03	.4422	—	118.6	—	.894
II - B	" "	" "	$Y = a+bX+cX^2$	−11.3	.6895	−.0006	18.2	2.5	.911
II - A(1)[b]	" "	" "	$Y = a+bX$	.81	.4462	—	118.3	—	.901
II - B(1)[b]	" "	" "	$Y = a+bX+cX^2$	−15.9	.8486	−.0010	30.3	7.2	.944
III - A	Cataloging Costs	" "	$Y = a+bX$	10.7	.7090	—	100.0	—	.877
III - B	" "	" "	$Y = a+bX+cX^2$	−17.8	1.3326	−.0016	28.1	6.5	.918
IV - A	Acquisition & Preparation Costs	Material Purchased	$Y = a+bX$	9.83	.7122	—	104.7	—	.882
IV - B	" "	" "	$Y = a+bX+cX^2$	−24.3	1.3984	−.0014	34.7	8.8	.930
V - A	Total Processing Costs	" "	$Y = a+bX$	36.9	1.2692	—	99.7	—	.877
V - B	" "	" "	$Y = a+bX+cX^2$	−31.4	2.6427	−.0028	43.1	12.3	.937

a Excludes one system.
b Excludes two systems.

MEASURES OF STATISTICAL SIGNIFICANCE

1. F-value

The F-value for "b" and "c" tells us whether the terms in the equation associated with "b" and/or "c" (X and X^2, respectively) make a statistically significant contribution towards the explanation of cost behavior. An F-value of greater than 4 is, by convention, assumed to mean that the term in the equation is significantly related to cost behavior.[1] In other words, if the F-value associated with the "X^2" is greater than 4, there is statistical evidence supporting the hypothesis that the cost function is curvilinear. The F-value associated with the term "X" may be interpreted in the same way. Our analysis, however, does not focus on the "X" term since it is common to both the linear and curvilinear cost functions. We are concerned mainly with the statistical significance of the "X^2" term.

2. R^2

R^2 is the multiple coefficient of determination and shows the percent of cost variation explained or accounted for by all the terms in the cost equations. An R^2 equal to 1.00 means that the terms in the equation completely "explain" or describe cost behavior. That is, the cost function "fits" the data perfectly. Conversely, an R^2 equal to zero means that the terms do not explain any of the variation in costs. By comparing the R^2 for the linear and curvilinear models, we are able to measure the additional explanation associated with the second term ("X^2") of the equation. The F-value associated with "c" tells us whether the addition of the term, "X^2", to the linear equation accounts for a statistically significant increase in R^2. If we conclude that the addition of the "X^2" term accounts for a statistically significant increase in the explanation of costs, the hypothesis that the cost function is curvilinear will be accepted.

SUMMARY OF STATISTICAL FINDINGS

Exhibit Table D-7 shows that, with the exception of Model II-B, the addition of the "X^2" term, i.e., the curvilinear cost function, provides significantly more explanation of cost behavior than the linear cost function. Since the value of "c" is negative in all cases, the implication of this finding is that marginal costs decrease as workload or output increases. As noted above, when considered separately, preparation costs seem to be an exception to this general finding in that the "X^2" term and, therefore, the curvilinear cost function does not give a significantly better description of the behavior of preparation costs than the linear function. However, considering the small number of observations on which each regression model is based it may be possible, by considering the fact the "X^2" term in every model except one is statistically significant and that the sign of "c" is negative in every case, to infer that the cost function for library preparation costs is curvilinear, with the decreasing marginal or incremental costs.[1] That is, this finding (i. e., the sign of "c") regarding preparation costs (Model II-B) is consistent with the results for other cost components in that it indicates that marginal preparation costs decrease as output increases. Furthermore, with the elimination of two systems [Model II-B(1)], the support given by the measures of statistical significance to the hypothesis that marginal preparation costs decrease as workload increases is much stronger.

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[1] See Arthur S. Goldberger and D. B. Jochims, "Note on Stepwise Least Squares," Journal of the American Statistical Association, March 1961, Vol. 56, p. 108.

DETERMINING THE OPTIMUM SIZE OF PROCESSING CENTERS

Using the results of the curvilinear cost models, it can be shown that intermediate sized processing centers are, in general, least efficient. That is, average unit processing costs would be highest for centers purchasing about 106,000 items.[2] For other cost components, highest average costs are associated with workloads of between approximately 95,000 and 140,000.

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[1] Compare. Johnston, op. cit., p. 63, n. 1.

[2] Average processing costs $= \frac{Y}{X} = \frac{a}{X} + \frac{bX}{X} + \frac{cX^2}{X} = \frac{a}{X} + b + cX$.

Average costs are at a maximum when $X = \sqrt{\frac{a}{-c}}$.

For Model V-B, $X = \sqrt{\frac{-31.40}{-.0028}} \simeq 106$. That is, average costs are highest when 106,000 items are purchased.

GENERAL COMMENT

There are many possibilities of distortion and bias that arise from the inadequacies of the data on which statistical cost analysis is based. Aside from errors in the cost and workload data, there also remains the possibility that other factors which influence cost behavior have been ignored. For example, if larger systems have installed equipment that result in economies of scale, i. e., decreasing marginal costs, these findings would overlook this relationship. However, if only the larger systems could economically employ more efficient equipment, the findings would remain valid. In other words, it is assumed that each library, whatever the scale of operations, is "producing" in the most efficient manner, given the current state of technology.

CONCLUSION

Notwithstanding the possible limitations discussed above, the statistical findings suggest that larger processing centers operate more efficiently. That is, marginal costs decrease as workload increases. Intermediate-sized processing centers, e. g., centers processing 100, 000 items, appear to be least efficient.

Exhibit II

MAIL DELIVERY TEST

To gain an idea of the amounts of time it takes to mail books to and from various parts of the state, the cooperation of a number of library organizations was enlisted. Three of them—Buffalo and Erie County Library, the State Library, and the Suffolk Cooperative Library System—joined with the contractor in sending a number of books by mail to various points in the state. Receiving these packages, in addition to the four library organizations mentioned above, were Piermont Public Library, Newark Public Library and Clinton-Essex-Franklin Library at Plattsburgh. The participating organizations were selected throughout the state so that in the course of the experiment books would be sent from and to a wide variety of points. Altogether 98 packages were sent, mailed within the space of two days in mid-January 1966. Each sender mailed four packages with one book in each package to each of the recipients. To test if there were any difference in the handling of books sent library rate from those sent book rate, half of these packages were sent at the one rate and the other half at the other rate. In addition, two packages containing some 25 books each were mailed library rate from Manhattan, one to the State Library and one to Buffalo-Erie. This was done to detect possible differences in the handling of relatively large packages as contrasted with small ones. None of the packages was insured. The recipients noted the day of each package's arrival(including whether A.M. or P.M.), and also noted if any package was not received in good condition. After all the packages were received the receipt information was tabulated. Exhibit Table D-8 shows results of this tabulation.

Though the results indicate that book rate mailings may tend to be handled a trifle faster than library rate mailings (overall average of 5.91 days for book rate as compared with 6.05 for library rate) the difference is so slight as to be insignificant. Library rates are siderably less than book rates: library rates—$.04 first pound, $.01 each additional pound; book rates—$.10 first pound, $.05 each additional pound. This substantial difference in cost would seem to indicate that of the two the library rates are the preferable.

The sent-received times for the two large packages do not seem to be indicative of anything. The one sent to Albany arrived considerably faster than the average for the one-book packages sent library rate from New York, while the large package sent to Buffalo from New York took slightly longer than the average for the smaller packages.

Only one package was reported damaged in the mails. It had been sent book rate from New York to Buffalo; it had to be rewrapped in the Buffalo post office.

SENT—RECEIVED TIMES FOR MAILED PACKAGES
(in days)

SENDERS	Recipients							Total Average Time
	Suffolk	Manhattan	Piermont	Albany	Plattsburgh	Newark	Buffalo	
Suffolk	▨	L 6.50 B 7.50	L 6.0 B 6.0	L 5.50 B 5.50	L 6.0 B 6.0	L 3.50 B 3.50	L 10.50 B 13.50	L 6.33 B 7.00
Manhattan	L 5.50 B 3.50	▨	L 5.75 B 7.0	L 6.50 P 3.50 B 6.50	L 3.75 B 6.75	L 13.75 B 6.75	L 7.0 P 7.50 B 7.50	L 7.04 B 6.33
Albany	L 6.50 B 6.50	L 7.50 B 6.50	L 3.0 B 3.0	▨	L 2.50 B 2.50	L 3.50 B 3.50	L 8.50 B 8.50	L 5.25 B 5.08
Buffalo	L 7.0 B 7.0	L 7.50 B 6.50	L 8.0 B 7.50	L 3.50 B 3.50	L 4.0 B 4.0	L 3.50 B 3.0	▨	L 5.58 B 5.25
Total Average Time								L 6.05 B 5.91

L = Library mail rate. B = Book mail rate. P = Package sent library mail rate.
Figures represent average of sent-received times for packages sent by sender to receiver at particular rate.

Exhibit III

BOOK CATALOG CALCULATIONS

OPTIMUM RECUMULATION INTERVALS

The longer the interval between recumulation of the main catalog, the fewer main catalog printings there are, and the more supplement printings. The minimum cost for the catalog results if there is the right balance between the cost of printing the main catalog and the cost of printing the supplements. The larger the size of the main catalog, the greater should be the interval between recumulations. Thus, with a constant volume main catalog, a constant interval between recumulations can be taken. However, with an expanding catalog, the interval should increase as the catalog grows.

For a constant volume catalog the optimum interval is given by the following formula:

$$\sqrt{2\ (\text{catalog size})\ (\text{supplement period})}$$

This should be adjusted to the nearest whole multiple of a supplement period. Catalog size and supplement period should both be in the same units, e.g., months or years. Catalog size is the number of years or months of acquisitions retained in the main catalog. Supplement period is the time interval between printing of supplements.

For an expanding catalog, starting from zero, the optimum is obtained by printing the first main catalog at the end of the third supplement period, and then increasing the interval between main catalog printings by one supplement period at each printing. Thus, if the supplement period is one month, main catalogs would be printed in the following months: 3, 6, 10, 15, 21, 28, etc. As time goes by this results in a slowly increasing interval between main catalogs. However, at the outset the variation is too great, so it is better to skip the first few printings in this series and start at a later point.

Both the formula for the constant volume catalog and the rule for the expanding catalog assume the average acquisition rate per supplement period to be roughly constant.

EXPLANATION OF PRINTING COST TABLES FOR CONSTANT VOLUME CATALOGS

Item Multiplication Factor

Each item entered into the catalog will be printed in each supplement until the next main catalog is printed, and then will continue to be reprinted in the main catalogs for a number of years. The item multiplication factor shows the number of times, on the average, that an item entered into the system will be printed in supplements and main catalogs.

This factor is calculated assuming main catalog reprintings at the optimum interval. The optimum interval is shown in the table for reference, but it is not needed to use the table.

The values in the table are calculated as follows:

$$\frac{1}{2}\left(1 + \frac{\text{optimum interval}}{\text{supplement period}}\right) + \frac{\text{catalog size}}{\text{optimum interval}}$$

Item Density

This factor relates to the amount of catalog space that a single item will require. This depends upon the number of entries printed for each item and the density per page with which entries are printed. The item density shows the equivalent number of items per page that are obtained for a given specification of entry density and entries per item. To look at it another way, an item density of 12 means that one item will generate entries that occupy a total of one-twelfth of a page of catalog space.

Cost Per Page

These are average commercial printing costs arrived at by inspecting data from a variety of sources. These costs include photography, platemaking, printing, collating, and binding. It is assumed that the computer printed page is completely formatted and requires only photo-reduction.

Pages Per Year

Using the data from Exhibit Tables D-9a and D-9b, the average number of pages per year (main and supplement) that will have to be printed for each item introduced is shown. This figure is simply F divided by D.

Yearly Catalog Cost

For the specific catalog proposed in the body of this report, Exhibit Tables D-9c and D-9d are applied to show yearly cost for various acquisition rates and numbers of copies. The results of these calculations are shown on Exhibit Table D-10.

Exhibit Tables D-9

BASIC PRINTING COST TABLES— CONSTANT VOLUME CATALOGS

Table D-9a

Item Multiplication Factor (F)

Supplement Period	Catalog Size	10 Year	13 Year	15 Year	20 Year
Monthly	Opt. Int.	15 Mo.	18 Mo.	19 Mo.	22 Mo.
	Item Factor	16	18.2	19.5	22.5
2 Month	Opt. Int.	22 Mo.	26 Mo.	28 Mo.	32 Mo.
	Item Factor	11.5	13	14	16
3 Month	Opt. Int.	27 Mo.	30 Mo.	33 Mo.	39 Mo.
	Item Factor	9.5	11	11.5	13

Table D-9b

Item Density (D)

Entries per Item		Entry Density per Page	
Con-densed	Full	60	100
		30	50
3	1	12	20
4	1	10	16.5
2	2	10	16.5
3	2	8.6	14.2
0	4	7.5	12.5
0	5	6	10
4	0	15	25
5	0	12	20

Table D-9c

Cost Per Page
(in dollars)

Copies	100	200	300	400	500	600	700	800	900	1000	1500
Cost	2.00	2.30	2.75	2.95	3.15	3.40	3.60	3.80	4.05	4.25	5.35

See next page for formula.

Table D-9d

Pages Per Year for Each Item Added

D \ F	9.5	11	11.5	13	14	16	18.2	19.5	22.5
6	1.6	1.8	1.9	2.15	2.3	2.7	3.0	3.25	3.7
7.5	1.25	1.45	1.55	1.75	1.85	2.1	2.4	2.6	3.0
8.6	1.1	1.3	1.35	1.5	1.65	1.8	2.1	2.3	2.6
10	.95	1.1	1.15	1.3	1.4	1.6	1.8	1.95	2.25
12	.79	.915	.955	1.1	1.15	1.35	1.5	1.6	1.9
12.5	.76	.88	.92	1.05	1.1	1.3	1.45	1.55	1.8
14.2	.67	.775	.81	.915	.985	1.1	1.3	1.4	1.6
15	.63	.73	.765	.865	.935	1.05	1.2	1.3	1.5
16.5	.575	.665	.695	.785	.85	.97	1.1	1.2	1.35
20	.475	.55	.575	.65	.70	.80	.91	.975	1.1
25	.38	.44	.46	.52	.56	.64	.73	.78	.9

Cost Formula

Let I = Items added per year
Let F = Item multiplication factor
Let D = Item density

Catalog cost = $\frac{IF}{D}$ (cost per page)

Note: Table D-9d gives values of F/D.

Exhibit Table D-10

YEARLY CATALOG COST IN THOUSANDS OF DOLLARS

(Assumptions: 10 year catalog, monthly supplements, 1 full entry and 3 condensed entries per item, 30 full entries per page, 60 condensed entries per page)

Copies / Yearly Added Titles	100	200	300	400	500	600	700	800	900	1000	1500
1,000	2.7	3.1	3.7	4.0	4.25	4.6	4.85	5.15	5.45	5.75	7.2
2,000	5.4	6.2	7.4	8.0	8.5	9.2	9.70	10.3	10.9	11.5	14.4
3,000	8.1	9.3	11.1	12	12.7	13.8	14.5	15.4	16.3	17.2	21.6
4,000	10.8	12.4	14.8	16	17.0	18.4	19.4	20.6	21.8	23.0	28.8
5,000	13.5	15.5	18.5	20	21.2	23.0	24.2	25.7	27.2	28.7	36.0
10,000	27.0	31.0	37.0	40	42.5	46.0	48.5	51.5	54.5	57.5	72.0
15,000	40.5	46.5	55.5	60	63.7	69.0	72.7	77.2	81.7	86.2	108
20,000	54.0	62.0	74.0	80	85.0	92.0	97.0	103	109	115	144
25,000	67.5	77.5	92.5	100	106	115	121	129	136	144	180
30,000	81.0	93.0	111	120	127	138	145	154	163	172	216
35,000	94.5	108	129	140	149	161	170	180	191	201	252
40,000	108	124	148	160	170	184	194	206	218	230	288
45,000	121	139	166	180	191	207	218	232	245	259	324
50,000	135	155	185	200	212	230	242	257	272	287	360
55,000	148	170	203	220	234	253	267	283	300	316	396
60,000	162	186	222	240	255	276	291	309	327	345	432

DESCRIPTION OF MACHINE SYSTEM

Section 1

Functions To Be Carried Out by the System

THE ITEM MASTER FILE

Central to the functioning of the system is a computer-maintained file of the items acquired after centralization by libraries throughout New York State. An item is a book, serial, film, record, etc. Each item is assigned a unique item number. All ordering and cataloging activity for an item on the master file may be done by reference to the item number.

It is intended that the item number be the Library of Congress card number, whenever such a card number is available.

ENTRY OF NEW TITLES INTO THE SYSTEM

Library of Congress Copy

In the design of the system it is assumed that Library of Congress catalog copy in machine readable form will be ultimately available. Provision is made for extracting catalog information from Library of Congress machine readable copy and entering it onto the item master file.

Books Received on Standing Order

The cataloging center will automatically receive new titles from publishers, either through the Greenaway Plan, as automatic on-approvals or as gifts. If the title has not already been entered onto the master file as a result of receipt of Library of Congress copy, then a new title notice will be prepared to enter the title onto the master file. If Library of Congress card number is printed in a book received automatically, then this will be used as the item number when this title is entered onto the master file, otherwise a New York State item number will be assigned. Provision is made for changing the item number to Library of Congress card number if this number becomes available later.

Lists Prepared by Selection Specialists

Any title not currently on the master file can be entered by means of a new title notice originated by library selection personnel. This may be a title which was not received through any other channel; it may be an old title from the old card catalogs.

Special Orders

Printed catalogs and printed selection lists will be supplied as described below to libraries throughout the state. The item number will be shown for every entry in these catalogs and lists. If a library wants to order an item for which an item number is not available in any catalog or selection list, then it can initiate a special order showing title, author, publisher, edition, and copyright date, if this is known. This will be clerically searched at the computer center to be sure that it is in fact a title that has not yet been handled at the center. If so, the special order will have the effect of entering the title on the master file and assigning an item number.

PREPARATION OF PRE-SELECTION LISTS AND MULTIPLE REQUISITION FORMS

It is assumed that although ordering, cataloging, and book preparation may be more highly centralized than at present, the preparation of recommended selection lists will continue to be the function of library systems' headquarters. Pre-selection lists will be sent to systems' headquarters. These will show all new titles entered on the file from all sources. The system headquarters will mark on this form all titles which it will recommend for purchase in its system and return the form to the statewide center.

In the case of the New York City systems and other large multi-branch libraries which receive books on standing order from publishers for inspection by librarians, a different procedure will be followed. Two copies of a multiple order form will be supplied to the library headquarters by the statewide center, for each new title. As the library receives books it will pull these multiple order forms from the file and insert them into the books. The books will go to a selection committee. The selection committee will return one copy of the multiple order form to the statewide center marked to indicate whether the book has been approved for ordering or not recommended for ordering. For selected books the other copy of the multiple order form will stay in the book and each branch librarian ordering the book will indicate the number of copies on this order form. Later these multiple order forms will be returned to the statewide center for processing.

PROCESSING SELECTION REPORTS AND PREPARATION OF SELECTION LISTS

From each system headquarters the statewide center will receive either pre-selection lists which have been marked by the system or copies of multiple order forms, one per title, which have been marked for selection. These will be processed by a character scanning device without further key-punching and as a result of this information, selection lists will be prepared, which will go to each system headquarters for distribution to member libraries or branches. These lists will contain item numbers and spaces for filling in numbers of copies desired and will be pre-printed with library number or branch number. Libraries other than large multi-branch libraries will use this selection list also as an order form. Large multi-branch libraries will already have been supplied with multiple order forms.

SUPPLIER ASSIGNMENT

When a new title is entered on the file, a supplier code is assigned and kept on the master file. This supplier code will be used in processing orders for that title. Present information indicates that publisher may be indicated on Library of Congress machine readable copy in coded form. This could allow a look-up by publisher, and perhaps class number also, for automatic machine assignment of supplier. This would be desirable since it will allow completely automatic entry of Library of Congress copy.

In the case of titles entered at the state center, it may be as easy to enter a supplier code at the time the new title notice is prepared as it would be to enter a publisher code and have the machine do a supplier assignment. It may also be necessary to indicate several suppliers for a single title and have programmed conditions for choice of supplier.

The question of supplier assignment, and whether machine assignment of supplier is desirable or possible is a question which needs further investigation.

PROCESSING REQUISITIONS AND PREPARING ORDERS TO SUPPLIERS

The bulk of the requisitions should come as check-offs on selection lists, or on pre-printed multiple order forms. Item numbers will be present on these inputs. Boxes will be provided where number of copies can be indicated by check marks, for most orders. For some orders the number of copies will have to be typed in. Many libraries keep their books in several collections (e.g., juvenile, adult). This affects the preparation of labels and catalog materials. Provision will be made for assignment of a "collection" code.

All requisitions on selection lists or multiple order forms will be entered directly into the machine system, via character scanner, without further handling. Where number of copies must be typed, because it cannot be accommodated by marks in boxes, it can be done at the originating point, or a mark can be placed on the sheet, signalling the machine to flag this requisition as one on which handwriting must be transcribed to typing at the state center.

If a library wants to order something that is not on a selection list or multiple requisition form, it submits a special order. If the library has access to a copy of the statewide union catalog and the item is in this catalog, then the library orders by means of the item number in the catalog. If it is not in the catalog but the library has the Library of Congress card number, then it orders by Library of Congress card number. If no number is available, then the library fills in author, title and publisher if known, and submits the order without item number.

If reliable typing can be done at originating agencies these requisitions can be entered directly into the scanner. Otherwise the information will have to be retyped at the state center before entry. Operational experience will be required to evaluate this point.

After requisition information is entered into the machine it will be recorded in the machine files and orders will be prepared and sent to suppliers. The machine will prepare the necessary mailing labels for mailing the orders to the suppliers. The library identification number will indicate the book processing center to which the library is assigned. Separate orders to suppliers will be prepared for each processing center. Every supplier will be instructed to ship to the processing center.

Whenever the machine file shows that an order has been placed for a book not already cataloged or in process of being cataloged at the state center, one copy of the book will be ordered for the state center for cataloging purposes. This will later be reshipped to a processing center.

PREPARATION OF PROCESS CONTROL SHEETS AND LABELS FOR PROCESSING CENTERS

After the machine has printed orders, process control sheets are printed for the processing centers. The process control sheet shows title, author, edition, publisher, supplier, order number, copyright date, ordering library and number of copies ordered. These are filed in the receiving room at the processing center. After the item is cataloged, spine labels, book pocket labels, and book card labels are prepared and sent to the processing center. They are filed with the process control sheet. Two copies of each process control sheet are sent. When books arrive the process control sheets are taken from the file. One copy is returned to the state center to report receipt of the books. If an invoice comes with the books, it is forwarded to the accounting department at the state center. If the number of copies received does not agree with the process control sheet this is marked. The other copy of the process control sheet is put into the book along with the labels and stays with the book during the processing. If this is the first time the library has ordered the title, a shelf-list card is sent. If the library is one which receives catalog cards, these are sent.

The receiving report is entered into the computer system and the files are updated to record the receipt of the shipment. If fewer books are received than were ordered, another pair of control sheets is sent to the processing center to be used with the remainder of the order.

When processing is completed at the processing center the control sheet that remained with the order is sent to the state cataloging and ordering center and this serves as an indication of shipment to the ordering library.

PROCESSING SUPPLIERS' INVOICES

Each few days the accounting department at the state center will receive work sheets in sequence by supplier, title and order number. These sheets will list all items still on order with the supplier. Item will be considered to be still on order if all copies requested on an order have not yet been received or if invoices for all copies have not yet been received. For these items the work sheet will show all invoice information already received and all receipts of books reported by processing centers. The accounting department will match newly received invoices against these work sheets and charge the invoiced amounts against the proper open orders. This information will be submitted to the computer center and used to update the files. On the following cycle new work sheets showing the latest state of affairs will be printed.

After every line of an invoice has been entered into the machine on one of these order sheets, one more input is required in order for the machine to prepare payment for the invoice. The accounting department must enter an invoice notice. This shows invoice number, total invoice amount and any adjustments including the discount if this is given on an order total basis rather than on an item-by-item basis. This notice serves three purposes: it is the accounting department's authorization to pay the invoice; it is the means of entering adjustments into the machine; it provides a check total, the invoice total, against which the machine can compare the total of all invoice items and adjustments.

MAKING PAYMENT TO SUPPLIERS

Periodically the machine will group all invoices which have been approved for payment and print a payment voucher listing these invoices along with any credits and adjustments and the total to be paid. This will go to the accounting department. If the accounting department approves the voucher it will be re-entered into the system. This is authorization to produce checks. The machine system will print checks corresponding to the voucher totals. It will produce a check register for the accounting department and it will produce mailing labels for sending the checks to the suppliers.

MAINTENANCE OF LIBRARY RECEIVABLES FILE

- Preparation of Billing to Libraries
- Preparation of Order Confirmations
- Maintenance of Branch Library Budgets
- Reconciliation of Payments to Suppliers with Billing to Libraries

The amounts for individual items on invoices which are entered into the machine on invoice work sheets are credited to the proper supplier and they are also charged to the ordering library. Periodically statements to the library are prepared and sent along with a portion that can be returned with payment. The payment reports are re-entered and update the files so that the next statement can be properly prepared. Along with each monthly statement an order confirmation is sent showing all new orders which the library has placed and all old orders still outstanding.

In the case of libraries with branches, inputs are provided with which the library may enter budget information for each branch. The system will charge all book purchases to the library headquarters and send a consolidated bill to the library headquarters. It will also charge these items against the individual branch budgets and send budget reports to the headquarters and the branches.

The machine will prepare labels for mailings to libraries and branches.

Periodically payments made to suppliers will be reconciled against billing made to libraries.

SERIAL SUBSCRIPTION RENEWAL

A record will be maintained by library, and library branch where applicable, of all serial subscriptions currently in force. A record of renewal date will also be kept. Sometime before renewal is due, notice of pending renewal will be sent to libraries. If no cancellation is received renewals will be sent to suppliers. The machine will keep a record of current subscription rates. Billing by suppliers will be machine-checked against a machine calculated billing and differences, if any, will be examined by the accounting department. If payment is authorized then checks to suppliers will be sent as described above and the amounts will be charged to libraries and billed accordingly.

SERIALS CHECK-IN

A supply of process control sheets and labels for the following year or some appropriate period of time will be sent to processing centers if the serials are to be processed at centers. In case of serials sent direct to libraries no labels or control sheets will be prepared. Control sheets will not be returned to the computer center to report branch shipments. Control sheets will only be returned if an issue of a serial is not received. The machine system will show receipt of the issue unless it receives a notice of non-receipt. When such notices are received, reminders to suppliers will be generated.

CATALOG WORK SHEETS

For each title that is to be entered into the catalog files the computer system will produce a catalog work sheet. This will contain all information on this title currently available in the machine files. At a minimum it should show author, title, publisher and edition. If the Library of Congress copy has been received, it will be printed on the catalog work sheet. The cataloger will change any information which he feels needs changing and will add missing information. If Library of Congress copy is not available the cataloger will do full cataloging, aided by whatever other copy has been provided by the searching staff. The catalog work sheet will be returned to the machine room and it will provide the information for catalog entry. The same procedure will be used for serials, monographs, and non-book material.

If the practice of using Library of Congress copy unchanged can be adopted,then in cases where Library of Congress copy is available,the production of the catalog work sheet might be bypassed. In such cases, the Library of Congress copy will be reviewed.

PROOFREADING

Each day proof copy will be produced for all newly entered cataloging information. It will be produced in a sequence which corresponds to the sequence in which the catalog work sheets are clerically maintained. It will be sorted so that all entries generated by the machine will be shown together and it will be formatted for easy proofreading. There will also be a report listing machine detected errors, particularly errors detected by the machine authority file checks. If any such errors are detected, this error report will be presented side-by-side with the proof copy.

ADMINISTRATIVE REPORTS

The most important of these reports will be the daily status report which will list all items on which there is any current activity in alphabetic sequence by title. The current status of the item will be shown, including the item's selection status, whether or not it is cataloged, how many copies are on order, how many have been received, how many have been shipped by the various processing centers and certain information relative to the inclusion of the title on selection lists. Newly entered items on which no action has been taken will also be shown. Any item to which an item number has been assigned should be present in either the printed catalog or the status report. Additional reports will be an open order report, report on orders overdue from suppliers, report on orders overdue at branches and various file-change audit listings.

CATALOG OUTPUTS

The principal catalog outputs are union book catalogs. There will be a statewide book catalog supplemented by regional book catalogs. In each catalog, holdings of the largest libraries will be shown. The holdings of all other libraries whose acquisitions are included in the catalog will not be specifically identified.

For staff use at cataloging center a union shelf list of all titles held in the state will be prepared and periodically updated.

Each library receiving a title for the first time will receive a shelf-list card for that title.

For those libraries for which a book catalog is not a satisfactory replacement for their card catalog, mainly the smaller libraries, catalog cards will be prepared.

For use of the staff at the cataloging center, machine maintained authority files will be periodically printed.

UNION HOLDINGS LIST

Only the holdings of certain libraries will be marked in the publicly distributed catalogs. This will be supplemented by holdings lists prepared for library staffs. At the state center, system centers and important libraries these will show statewide holdings for every title. The lists will be in alphabetic sequence by title (or author if preferred). For each title the list will indicate the author, title, item number, and holdings symbols of all public libraries currently holding that title.

NON-BOOK MATERIALS

There is no basic difference in the machine procedures required for ordering and cataloging non-book materials as compared for book material, and there is no obstacle to including them in the ordering system and including them in the catalogs. The principal difference that exists is one not connected with the machine procedures. Certain types of non-book materials may be collected primarily at points in the state distant from the state cataloging center and it may be more sensible to have cataloging for these materials done at these points rather than at the cataloging center. If so, there is no difficulty in having the cataloging center accept copy of the cataloging done at these points for inclusion in the catalog.

STATISTICS

The computer system will be able to prepare cataloging and order statistics far more extensive than those presently available.

Section 2

System Flow Chart

This textual material explains Charts E-1 and E-2 which follow it.

The system can best be described by dividing the functions into four major catagories.

I. Input, Transcribe and Sort
II. Update, Output and Sort
III. Catalog
IV. Process and List

INPUT, TRANSCRIBE AND SORT

Daily, during Run-1, the proper input from the various library departments is scanned and read into the computer using the page reader. Errors are checked and flagged, and two magnetic tapes are generated. One will contain all new items for which there is no Library of Congress card number, and the other will have transcribed the rest of the paper input.

The new items without LC number are entered into Run-4 where they are merged with the LC copy file—bibliographic information received periodically from LC—and sorted to author, title, and publisher sequence. The tape is then matched, in Run-5, against the cumulative file of LC copy and entries on the system for which no LC number or copy have been provided. Daily, an updated new items file is produced containing all the titles split off during Run-1, with the relevant LC number and copy added to the items, plus any selected LC copy that meets the prescribed criteria for entry to the system's item master file.

This new information is merged with the previously transcribed input and is sorted in Run-2 to item number, the unique classification for all titles in the system.

Input to Sort Run-2

1. New title notices;
2. Selection— rejection notices;

3. Completed catalog work sheet;
4. Requisitions from libraries and branches—multiple, special, and cancellations;
5. Completed receiving work sheet;
6. Completed library shipment work sheet;
7. Completed invoicing work sheet;
8. Debit and credit to supplier notices;
9. Invoice notices;
10. Validated voucher notice;
11. Library payment notice;
12. Special information requests;
13. Label, catalog, and shelf-list cards request;
14. File changes—library, supplier, authority, item master;
15. Supplier assignment notices.

To these 15 notices from the various library departments, must be added:

16. File of LC updated new titles and selected LC copy from Run-5;
17. All changed item numbers and cross references from old item numbers — split off the basic output file in Run-6;
18. Errors discovered in catalog information when matched against the authority file in Run-7 (these notices cause the associated heading to be flagged on the item master file until corrections are made by the catalog department).

UPDATE, OUTPUT AND SORT

The processing of the input records, updating of the item master file, and generating of the basic output file are all accomplished in Run-3.

During this run, the sorted basic input is matched against the item master file which is updated and rewritten. For every input, the program generates a corresponding output record except for the following:

1. New Title—no record is written to the basic output file; the title is added to the item master file;
2. Requisitions—one output record for each title/library requested;
3. Catalog—the necessary tracings are written to the basic output as separate records, at an average ratio of 4 output records for each item, plus one record for the union shelf list file;

4. Shipment—duplicate output record, one to be used to update holdings, and the other for processing information;
5. There will be one output record for every title on the item master file that is in active status. This is estimated to be approximately 33% of the item master file.

Every record on the basic output file will have a heading containing the sorting number and criteria for the particular record. The file will be entered into Run-6 where each type of record will be sorted by its number and criteria, and three tapes will be produced. The file with all changed item numbers and cross references will be re-entered in Run-2 for item master file updating;the file containing cataloging and holdings information and errors will be passed on to Run-7 for the first steps in catalog production; and the file with ordering, preparing, and processing information is entered into Run-10 for the processing and listing runs.

CATALOG

Run-7 accepts the split output tape containing catalog and holdings information, authority file changes and errors,and matches this file against the authority master. All errors are flagged, the authority file is updated, the month-to-day supplement catalog is updated with new catalog and holdings information, and an error file, proof copy of new cataloging, and cumulative authority file changes are written to an output tape. In Run-8, daily, this file is sorted to proofreading sequence, errors are consolidated, and the tape is split so that all errors found in Run-7 during authority matching can be re-entered into Run-2 for item master file flagging. The proof copy and error file are printed daily in Run-9 to produce for the catalog department:

1. Proof copy for cataloging;
2. Error list;
3. Month-to-day cumulative authority file changes.

Once a month, the month-to-day supplement and holdings file are entered into Run-15 where the year-to-month supplement file is updated and the monthly supplement catalog is printed. It undergoes reduction, platemaking, printing and binding for use by public and staff. Run-15 also produces for use by the catalog department:

1. New union shelf list by classification number;
2. Holdings information by title;
3. Authority file;
4. Catalog statistics.

Every 15 months in Run-18, the year-to-month supplement file is run against the previous year's main catalog, and a new main catalog and union shelf list is produced.

There are two more listings associated with new titles that must be mentioned: 1) monthly, out of Run-14, central staff receives a listing of all LC titles received, but not inserted on the item master file; and a list of titles currently on the master file for which no LC copy has been received. This information will serve a twofold purpose. First, any spelling changes in author, title, etc., which might have caused a no-match during Run-5 can be found and re-entered into the system correctly. Second, these listings are used for visual search for presence of LC copy for those classes of items on which it is felt that the likelihood of ordering is not high enough for automatic entry of LC copy onto the item master file; 2) every three months, Run-14 will notify LC of any items which have been on the system's master file for a prescribed period of time without receiving any LC copy.

PROCESS AND LIST

The sorted split output tape from Run-6, daily, which contains non-catalog information is saved and merged twice weekly for entry into Run-10 which further splits the file into two tapes, one containing billing and budget information and the other with items associated with ordering and suppliers. Run-10 also prints for the receiving department the book labels, shelf-list cards and catalog cards. For central staff use, Run-10 prints a status report describing the ordering, cataloging, and processing action taken on all active items on the master file; selection, rejection, and new title "no action" lists; and a catalog work sheet to be completed by the cataloger and re-entered into Run-1.

The split order file, sequenced by supplier and library, is read into Run-11 twice weekly to update the supplier master file with all current ordering, receiving, and invoicing information. Run-11 produces 10 different listings:

1. Process control work sheet—one copy to receiving department for return to computer upon receipt of an item and a second

copy to processing department to return upon shipment of title to library;

2. Error listing to order and accounting department for correction;
3. Orders to supplier to order department for verification;
4. Completed orders report—one copy each to ordering, accounting, and receiving;
5. Payment voucher work sheets to accounting department for approval and re-entered into Run-1;
6. Return to supplier notices to ordering and receiving;
7. File change audit register to ordering for future reference;
8. Miscellaneous debit and credit register to accounting;
9. Checks to supplier;
10. Check register to accounting department.

Run-11 also generates an order file containing all orders and all debits and credits to suppliers that have not yet been processed. This tape is sorted twice weekly in Run-12—orders are sequenced by supplier and title, and debits and credits by account number. Run-13 prints the sorted tape and produces the following listings:

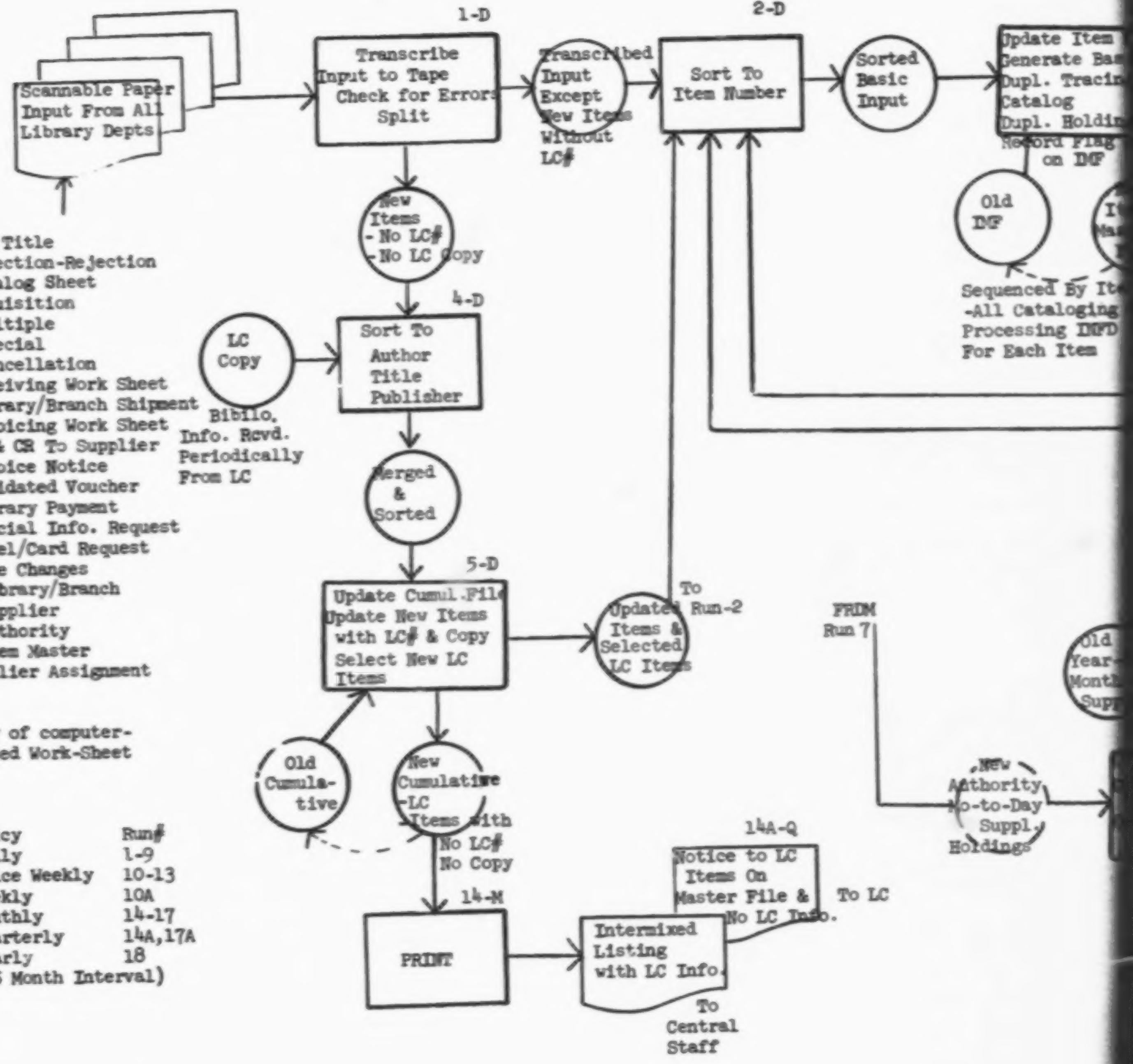
1. Accounts to charge and credit for entry into the general ledger;
2. Overdue orders report to ordering for verification and notice to suppliers;
3. Invoicing work sheet to accounting department where the order number, quantity, and amounts are transcribed and re-entered into Run-1.

The split bills and budget file is saved and merged monthly to be entered into Run-17. The supplier master file is sorted monthly in Run-16 to library code sequence and is used in conjunction with the bills and budget file to update the library master file. All accounting information, orders, receipts, payments, budget by category where applicable, etc., are kept on the library master and updated monthly. Run-17 produces the following reports:

1. Bills to member libraries and budget reports to branches (where applicable);
2. Statement and order confirmation to libraries;
3. Serials and books overdue at libraries to central staff for verification and notice to processing center or supplier;
4. Subscription—serial renewals to be re-entered into Run-1 as requisition notice.

Char

INPUT TRANSCRIPTION, ITEM MAST


Scannable Paper Input From All Library Depts
1-D
Transcribe Input to Tape Check for Errors Split
Transcribed Input Except New Items Without LC#
2-D
Sort To Item Number
Sorted Basic Input
Update Item
Generate Ba
Dupl. Tracin
Catalog
Dupl. Holdin
Record Flag
on IMF
Old IMF
Sequenced By It
-All Cataloging
Processing INFD
For Each Item
New Items - No LC# - No LC Copy
4-D
LC Copy
Sort To Author Title Publisher
Bibilo. Info. Rcvd. Periodically From LC
Merged & Sorted
5-D
Update Cumul. File Update New Items with LC# & Copy Select New LC Items
Updated Items & Selected LC Items
To Run-2
FROM Run 7
New Authority Mo-to-Day Suppl. Holdings
Old Year- Month Supp
Old Cumulative
New Cumulative -LC -Items with No LC# No Copy
14-M
PRINT
Intermixed Listing with LC Info.
To Central Staff
14A-Q
Notice to LC Items On Master File & No LC Info.
To LC

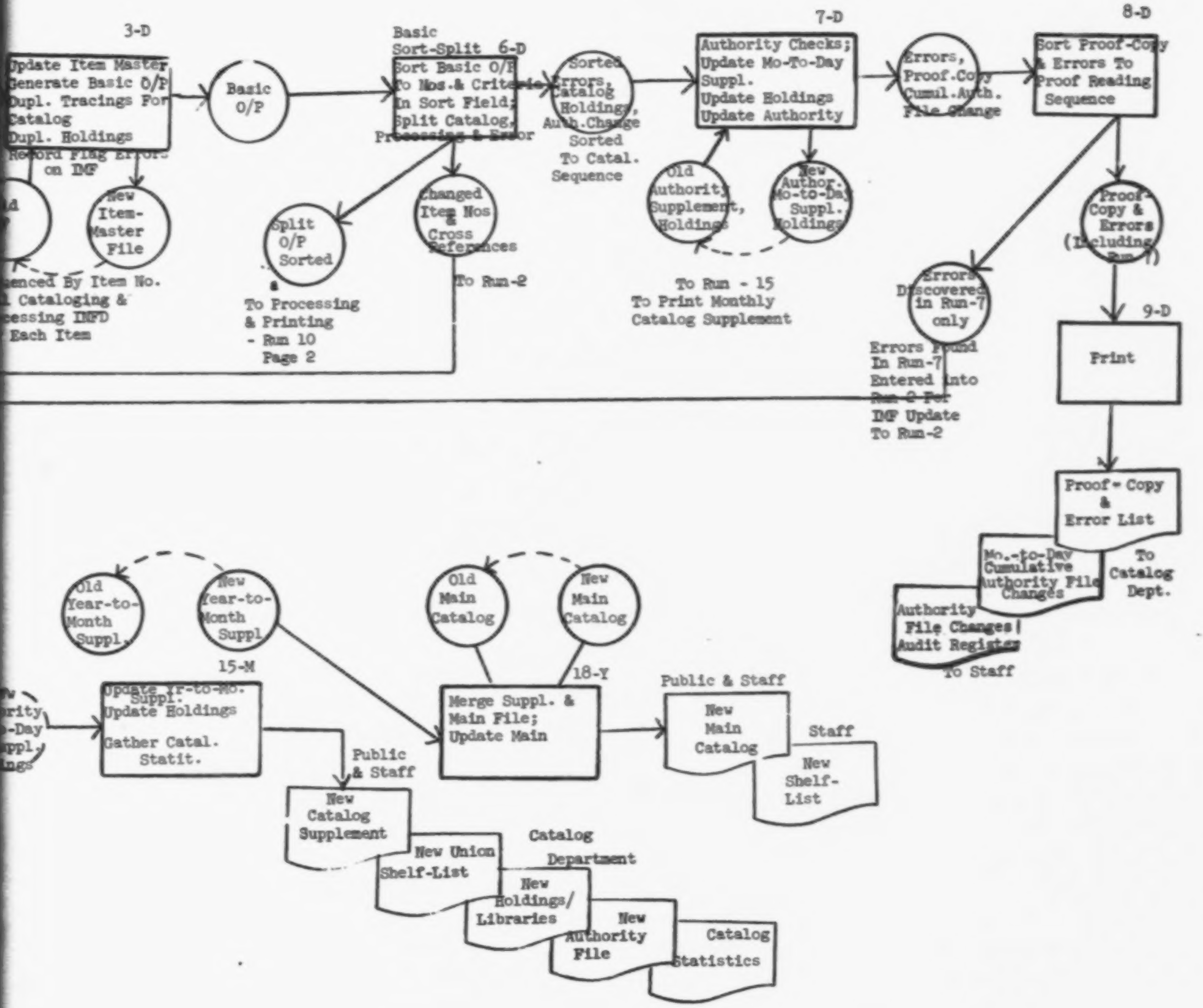
1. New Title
2. Selection-Rejection
*3. Catalog Sheet
4. Requisition
   -Multiple
   -Special
   -Cancellation
*5. Receiving Work Sheet
*6. Library/Branch Shipment
*7. Invoicing Work Sheet
8. DR & CR To Supplier
9. Invoice Notice
*10. Validated Voucher
11. Library Payment
12. Special Info. Request
13. Label/Card Request
14. File Changes
   -Library/Branch
   -Supplier
   -Authority
   -Item Master
15 Supplier Assignment

*Reentry of computer-Generated Work-Sheet

Frequency	Run#
D-Daily	1-9
T-Twice Weekly	10-13
W-Weekly	10A
M-Monthly	14-17
Q-Quarterly	14A,17A
Y-Yearly (15 Month Interval)	18

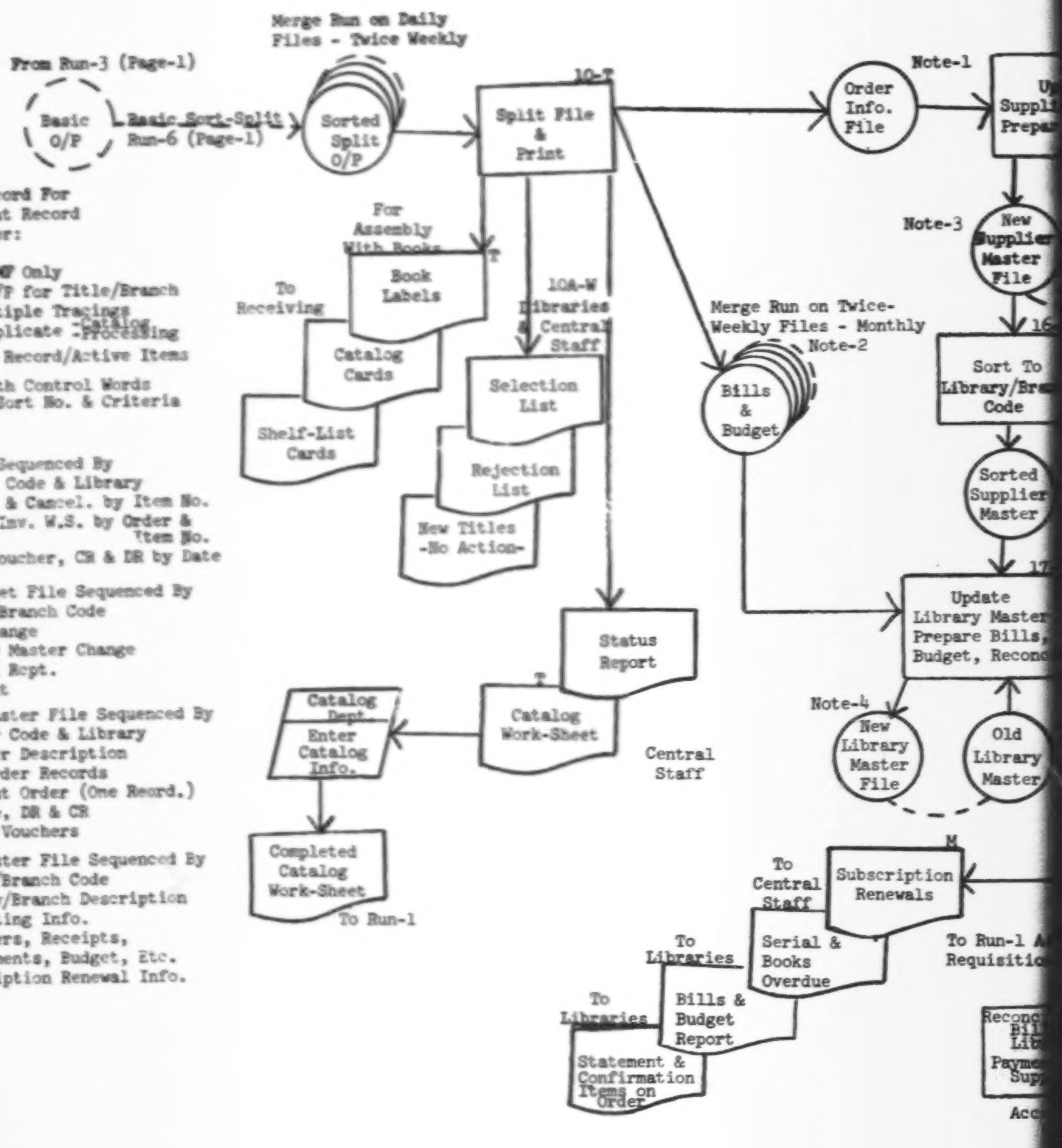
Chart E-1

M MASTER FILE MAINTENANCE, CATALOGING


3-D
Update Item Master
Generate Basic O/P
Dupl. Tracings For Catalog
Dupl. Holdings
Record Flag Errors on IMF
New Item-Master File
enced By Item No.
l Cataloging &
essing INFD
Each Item
Basic O/P
Basic Sort-Split 6-D
Sort Basic O/P To Nos.& Criteria In Sort Field; Split Catalog, Processing & Error
Split O/P Sorted
To Processing & Printing - Run 10 Page 2
Changed Item Nos & Cross References
To Run-2
Sorted Errors, Catalog Holdings, Auth.Change Sorted To Catal. Sequence
7-D
Authority Checks; Update Mo-To-Day Suppl. Update Holdings Update Authority
Old Authority Supplement, Holdings
New Author. Mo-to-Day Suppl. Holdings
To Run - 15
To Print Monthly Catalog Supplement
Errors, Proof.Copy Cumul.Auth. File Change
8-D
Sort Proof-Copy & Errors To Proof Reading Sequence
Proof-Copy & Errors (Including Run-7)
Errors Discovered in Run-7 only
Errors Found In Run-7 Entered into Run-2 For IMF Update To Run-2
9-D
Print
Proof-Copy & Error List
To Catalog Dept.
Mo.-to-Day Cumulative Authority File Changes
Authority File Changes/ Audit Register
To Staff
Old Year-to-Month Suppl.
New Year-to-Month Suppl
15-M
Update Yr-to-Mo. Suppl. Update Holdings Gather Catal. Statit.
rity
-Day
ppl.
ings
Public & Staff
New Catalog Supplement
New Union Shelf-List
Catalog Department
New Holdings/ Libraries
New Authority File
Catalog Statistics
Old Main Catalog
New Main Catalog
18-Y
Merge Suppl. & Main File; Update Main
Public & Staff
New Main Catalog
Staff
New Shelf-List

Cha

ORDERING, ACCOUNTING, MATE



From Run-3 (Page-1)
Basic O/P
Basic Sort-Split Run-6 (Page-1)
Merge Run on Daily Files - Twice Weekly
Sorted Split O/P
10-T
Split File & Print
Order Info. File
Note-1
Note-3
New Supplier Master File
For Assembly With Books
T
Book Labels
To Receiving
Catalog Cards
Shelf-List Cards
10A-W
Libraries & Central Staff
Selection List
Rejection List
New Titles -No Action-
Merge Run on Twice-Weekly Files - Monthly
Note-2
Bills & Budget
Sort To Library/Br Code
Sorted Supplier Master
Update Library Master Prepare Bills, Budget, Recon
Status Report
T
Catalog Work-Sheet
Central Staff
Catalog Dept. Enter Catalog Info.
Completed Catalog Work-Sheet
To Run-1
Note-4
New Library Master File
Old Library Master
M
To Central Staff
Subscription Renewals
To Libraries
Serial & Books Overdue
To Libraries
Bills & Budget Report
Statement & Confirmation Items on Order
To Run-1

1 Output Record For
Each Input Record
Except For:

New Title-IMP Only
Requis.-1 O/P for Title/Branch
Catalog-Multiple Tracings
Shipment-Duplicate -Catalog -Processing

Plus Status Record/Active Items

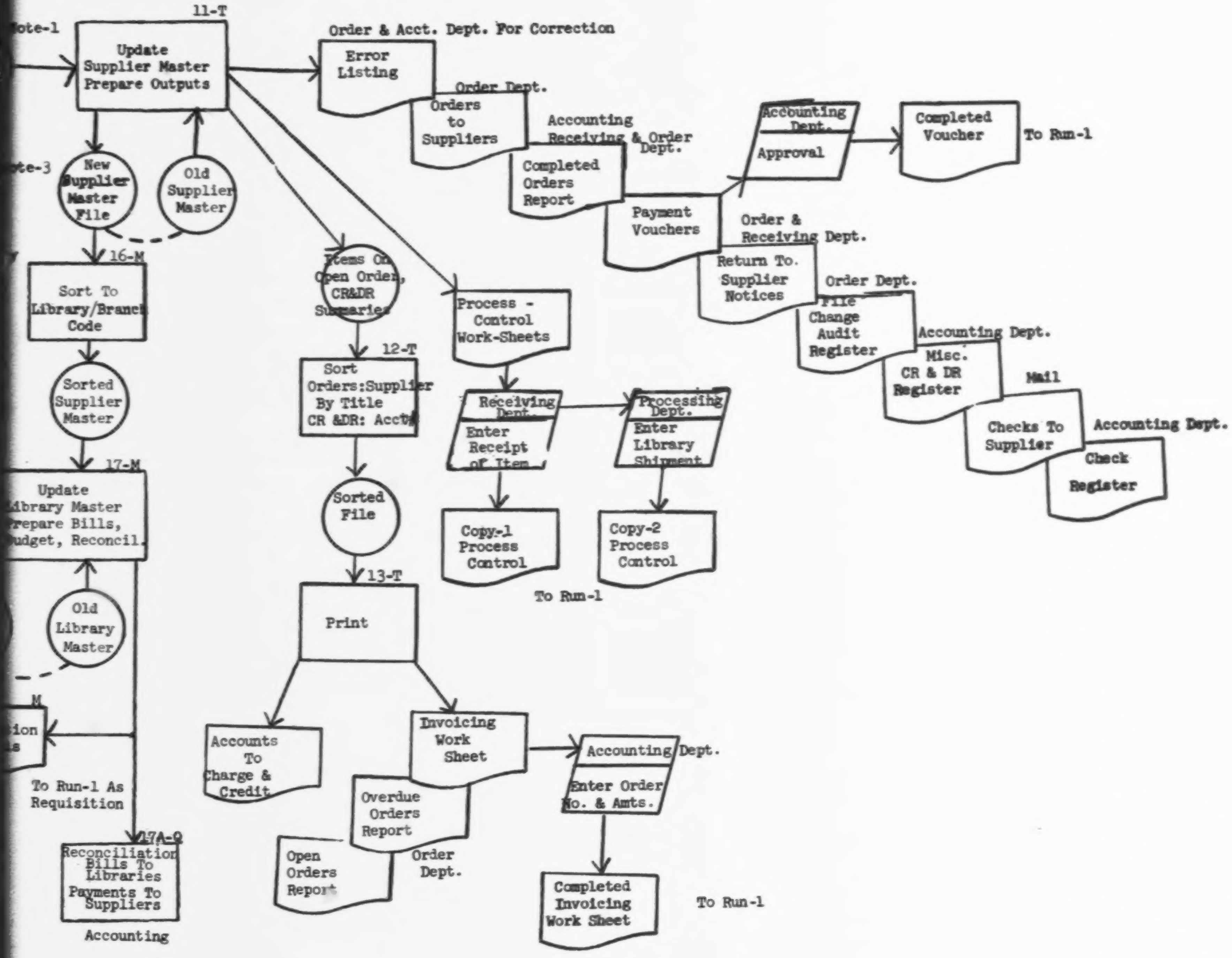
Each Record with Control Words
Containing Sort No. & Criteria

NOTES

1. Order File Sequenced By
   Supplier Code & Library
   -Requis. & Cancel. by Item No.
   -Rcv. & Inv. W.S. by Order & Item No.
   -Inv., Voucher, CR & DR by Date
2. Bill & Budget File Sequenced By
   Library/Branch Code
   -Item Change
   -Library Master Change
   -Payment Rcpt.
   -Shipment
3. Supplier Master File Sequenced By
   Supplier Code & Library
   -Supplier Description
   -Sent Order Records
   -Not Sent Order (One Recrd.)
   -Invoice, DR & CR
   -Unpaid Vouchers
4. Library Master File Sequenced By
   Library/Branch Code
   -Library/Branch Description
   -Accounting Info.
      -Orders, Receipts,
      Payments, Budget, Etc.
   -Subscription Renewal Info.

Chart E-2

, MATERIAL FOR BOOK PROCESSING CENTER


ote-1
11-T
Update Supplier Master Prepare Outputs
Order & Acct. Dept. For Correction
Error Listing
Order Dept.
Orders to Suppliers
Accounting Receiving & Order Dept.
Completed Orders Report
Payment Vouchers
Accounting Dept.
Approval
Completed Voucher
To Run-1
Order & Receiving Dept.
Return To Supplier Notices
Order Dept.
File Change Audit Register
Accounting Dept.
Misc. CR & DR Register
Mail
Checks To Supplier
Accounting Dept.
Check Register
ote-3
New Supplier Master File
Old Supplier Master
16-M
Sort To Library/Branch Code
Sorted Supplier Master
17-M
Update Library Master Prepare Bills, Budget, Reconcil.
Old Library Master
M
ion
s
To Run-1 As Requisition
17A-Q
Reconciliation Bills To Libraries Payments To Suppliers
Accounting
Items On Open Order, CR&DR Summaries
12-T
Sort Orders:Supplier By Title CR &DR: Acct.
Sorted File
13-T
Print
Accounts To Charge & Credit
Invoicing Work Sheet
Overdue Orders Report
Open Orders Report
Order Dept.
Accounting Dept.
Enter Order No. & Amts.
Completed Invoicing Work Sheet
To Run-1
Process - Control Work-Sheets
Receiving Dept.
Enter Receipt of Item
Processing Dept.
Enter Library Shipment
Copy-1 Process Control
Copy-2 Process Control
To Run-1

Section 3

Equipment Specifications

RELATION OF EQUIPMENT SPECIFICATIONS TO SYSTEM FLOW CHART

The system flow chart on the preceding pages is presented for a minimum equipment configuration. This minimal configuration is:

One computer processing unit
Four magnetic tapes
One page reader
One printer

The equipment configuration upon which the costs for the statewide system are based involves more equipment than this. A separate machine is assumed for printing and input reading, and more tapes than four are available on the machine that is used for file processing. In implementing the system on this configuration, some modification would occur in the flow chart; these are:

1. Wherever a printout is shown coming direct from the computer, it will in fact first be written on tape and then taken to the input-output computer for printing.

2. Because there are additional tapes available, certain expedients used to keep to a four-tape limitation are not necessary. For instance, in certain cases, several groups of records are put into a single sort and split into several files in the last pass of the sort. With more tapes, it would be, in some cases, advantageous to split off certain files before sorting.

Since the system as shown can be implemented on a four-tape system, it can be used in much the same form on a lower level of centralization. In establishing a statewide system there would be an initial phasing-in period at low volume, and during this period it would be economical to use the system as shown in the chart.

Equipment Specifications for a Statewide System

Because of the large volume of orders and the large volume of catalog printing expected on the statewide system, a two-machine configuration is proposed. One is to be used for file processing. The other is to be used for input-output operations. Two printers are specified on the input-output computer. This is in consideration of the month-end peak printing load as well as the generally large printing volume. The equipment specifications are as follows:

File Processing Machine

- One computer processing unit
- Two input-output channels
- Six magnetic tape units

Input-Output Machine

- One page reader
- One computer processing unit
- Two magnetic tape units
- Two printers

The cost estimate for this equipment has been based upon units of the IBM-360 line of equipment, except for the page reader. This is not to be construed as a specific recommendation for the use of these units. Similar equipment is available from a number of other manufacturers at comparable prices.

Even at the volumes involved in a statewide system, the processing requirements appear to be low enough to be satisfied by a computer with the internal speed of the Model 30 in the IBM-360 line. On the file processing machine 32,000 characters of memory appear adequate. A capacity of 8,000 appears adequate for the input-output machine. Tape speeds of 30,000 characters per second (Model 1 tape units of the IBM-360 line) are adequate. On the input-output machine, two printers with rated speeds of 1,100 lines per minute have been assumed (IBM-1403 Model 3). It is further assumed that a special interchangeable print chain cartridge with upper and lower case characters will be used for printing the catalog. This will cut the effective speed to about 500 lines per minute. The pricing of the page reader is based upon the Control Data Model 915 page reader.

This gives the following cost estimate:

	Annual Rental
File processing machine	$ 80,000
Input-output machine, except for page reader	65,000
Page reader	24,000
Total	$169,000
Total rounded to nearest $10,000	$170,000

Section 4

Aspects of the Recommended System

FUNCTIONS CARRIED OUT BY CLERICAL AND PROFESSIONAL STAFF

The state center for cataloging and ordering is based upon a combination of conventional clerical and professional techniques and the use of high speed electronic data processing equipment. Conventional techniques are retained where the work requires professional judgment or where a reliable machine technique for carrying out a clerical procedure is not available, or where the input and exception procedures associated with a machine technique would clearly be more onerous than continuation of conventional clerical techniques.

Thus professional human activity is retained for descriptive and subject cataloging and assignment of classification numbers when this information is not available from the Library of Congress. Clerical and semi-professional activity is required in the following areas:

1. Searches by author and title. The majority of these searches will be eliminated by the machine system. Books and other materials will be uniquely identified by an item number. The item number will be either the Library of Congress card number or a number assigned by New York State. As will be shown below this number will be available in most cases and machine searches can be made using this number. However, when this number is not available the search must be done by author and title. When author and title information originating at different places is to be matched, sufficient uniformity to permit a reliable machine match cannot be expected. An exception is the case when Library of Congress and state center information are being matched. It should be possible to do machine matching on the outputs of two highly professional agencies working, it is hoped, with a common set of standards. Thus this type of machine searching is planned here. Author and title searches which will have to be done clerically are:

  a. If a book received automatically does not have Library of Congress number printed, it must be searched to determine that it is really new. Searching will be performed in the status report (a generalized in-process report) and the catalog. If Library of Congress number is available, machine search can be done.

  b. Special orders without item number must be searched in the status report and catalog to see if a number is available.

2. Matching of actual books against machine produced records. Thus:

   a. Libraries using multiple order forms in connection with books received automatically will have to match books against multiple order forms received from the state center.

   b. The process control sheets and labels produced at the state center will have to be matched against books received at the preparation centers.

3. Crediting of items billed on supplier's invoice against the proper order number. This is done clerically in the accounting department.

4. Authorization of payment checks to suppliers. Authorization notices from the accounting department are required at two separate points in the procedure.

5. Clerical or semi-professional origination of changes to the supplier master file, publisher master file, and item master file.

6. Proofreading of catalog copy.

7. Clerical, semi-professional or professional intervention in connection with error reports and other unusual conditions.

Use of Character Reader As An Input Device

The input device recommended for use in this machine system is a character reader. Thus, the appropriate data-originating devices are typewriters and the computer printer. The entire reason for recommendation of this rather expensive input device is that a large volume of machine input will consist of re-entered machine produced output. These inputs are:

1. Selection reports;
2. Orders based on selection lists;
3. Orders based on multiple requisition forms;
4. Receiving reports;
5. Branch shipment reports.

There are a number of other re-entered outputs but those above are the ones of large volume. Since all of these inputs will contain pre-printed item numbers for all items on the input, use of the scanner eliminates the necessity to key-punch the item number. At the volume levels under consideration in a statewide system, this is a significant saving in key-punching. However, this is not the major consideration. There will also be a great reduction in item number errors, and for an identifying number as important as item number, this is very important. In addition the operational convenience and time saved as a result of direct entry of input without preliminary handling is very significant at these volume levels. It should be noted that in the companion report to this one prepared for New York City alone, the use of a character reader is not recommended since the volume level is too low.

Similar results can be achieved using punched cards, prepunched with item number. However, the space limitations of punched cards, the problems of either printing and punching into the same card, or punching into a card and interpreting it, make this a much less desirable approach than the use of a scannable document.

When a computer output is re-entered, there will be additional information on the form. In a very large number of cases, this will be indicated by merely putting marks into appropriate boxes on the forms. In some cases a small amount of additional typing will be required. If this is done at the point of input origination, then all reentered input can go direct to the machine without any preliminary handling. If it proves impractical to control the input quality at many different points, then a small central retyping operation may be required.

The majority of the original typing effort occurs when an item is first established on the item master file. If it is established as a result of receipt of Library of Congress copy, no original typing is required. From then on, control in the system is achieved by means of item number, which will be pre-printed by the computer in most cases. Full descriptive information will be extracted from the computer files.

SPECIAL FEATURES OF THE SYSTEM

Four important features of the system should be noted—they are:

1. The control of the entire system by item number, which is the Library of Congress card number whenever it is known. This is a major innovation and is crucial to the effective functioning of the system. To the extent that item number is not available the procedure becomes similar to the usual manual procedures.

2. Another important innovation is the preparation of a daily status report for all items on which there is any current action. This is effectively a consolidation of the various types of in-process files and tentative catalog information kept at a library and should improve the efficiency of the clerical work that does have to be done.

3. The ultimate availability of Library of Congress copy in machine readable form is an important factor in this system. Not only will it allow the entry of many new titles without key-punching but if it is not available, the system will pay a penalty as compared to manual systems. In non-computerised systems, cards can be reproduced by photographic reproduction of Library of Congress copy. If this copy is not available in machine readable form, then a complete keyboard operation will be required to produce catalog information as compared to the simple photographic process in a non-computerised system.

- An important feature that does not appear on the surface in the system description, is the fact that wherever card catalogs can be replaced by the computer produced book catalogs, all of the time and cost of card filing and card catalog maintenance is eliminated. In large libraries, this is not an inconsiderable cost.

PROJECTED COSTS OF THE RECOMMENDED PLAN

Section 1

Operating Costs

This appendix discusses the costs estimated for the recommended processing plan. The recommended plan itself is discussed in the main body of the report and in Appendix D. The bases for the cost estimates made for the recommended book catalogs to be produced are discussed in Appendix D.

The costs for the recommended plan as set forth in Appendix D and the figures used in this appendix come to the same total amount. However, the figures were arranged in Appendix D to permit valid comparisons between each element of the present arrangement for processing and the corresponding element of the recommended plan, while the cost figures are arranged in this appendix according to the actual distribution of processing functions in the recommended system. For example, the cost of assembling book cards and catalog cards is included under preparation in Appendix D while here it is redistributed to acquisition since under the recommended plan the function will be performed at the cataloging-acquisitions center.

The cost estimates for each of the four elements— acquisition, cataloging, preparation, and delivery— are dealt with separately below. In addition there is a discussion of the costs of the production of book catalogs and cards and catalog maintenance. Primarily because the electronic data equipment which would be used in the recommended plan would affect each of the processing elements differently, the estimated costs for the various elements have been developed in different ways. All estimates include allowances for expected personnel and overhead expenses.

Table F-6 at the end of this section summarize these cost figures and comparisons.

ACQUISITIONS

The recommended plan would substantially change the acquisitions function. The change most affecting the estimation of costs for the recommended acquisition procedure is the heavy employment in it of EDP equipment. Since the recommended procedure is substantially different from any of the present operations for which we have costs, the estimate for this element has been built from a series of estimates made for the various activities which will be performed in the acquisition element. These estimates and the total arrived at are shown in Table F-1.

Table F-1

ESTIMATE FOR RECOMMENDED ACQUISITION ELEMENT

Function or Expense	Annual Cost
Machine costs	
Rental	$ 69,000
Supporting personnel and other expenses	81,000
Sub-total machine costs	$150,000
Other costs	
Receiving and mailing	70,000
Assembly	255,000
Mailing of pockets, etc.	20,000
Searching	112,000
Reproducing and collating	65,000
Order followup	30,000
General administration	100,000
Contingencies	50,000
Sut-total other costs	$702,000
Total all acquisition costs	$852,000
Rounded to nearest $10,000.	$850,000

CATALOGING

In the recommended plan this element would also make some use of EDP equipment. It would use the one installation of equipment which would also be serving the acquisition element as well as producing catalog materials. (In estimating the individual machine costs for the activities making substantial use of the EDP equipment—acquisitions, cataloging and catalog material production—the total estimated machine costs for the one installation have been divided among the activities on the basis of the proportion of the total machine effort which it is expected each activity will take.)

The estimate of "Other costs" for this element is based upon the number of professional cataloging personnel believed to be needed to catalog 45,000 titles in a year. The assumption has been made that 25,000, or about 56%,of these titles will already have been cataloged by the Library of Congress by the time they are cataloged at the acquisition order center, that the cataloging output of the Library of Congress will be available on machine readable tape, and that the acquisition order center will make full use of the Library of Congress cataloging output.

(table on following page)

Table F-2

ESTIMATE FOR RECOMMENDED CATALOGING ELEMENT

Function or Expense	Annual Cost
Machine costs	
Rental	$ 46,000
Supporting personnel and other expenses	54,000
Sub-total machine costs	$100,000
Other costs	
Head cataloger, salary and benefits	20,000
Catalogers, salary and benefits	110,000
Supporting personnel, salary and benefits	80,000
General administration	60,000
Contingencies	40,000
Sub-total other costs	$310,000
Total all cataloging costs	$410,000

PREPARATION

The estimate for this element is based upon the present costs in New York City and an assumed unit item cost for upstate items slightly less than the average 1964 cost at upstate systems. An average item cost slightly less than the upstate actual was chosen to take into account the lower costs which Exhibit I of Appendix D indicates tend to come with higher volume. No allowance for EDP operations has been included in the estimates for this element because the use of EDP equipment is minimal in this case when compared with the use of such equipment in the acquisition and cataloging elements. Table F-3 sets out the estimates for the preparation element.

Table F-3

ESTIMATE FOR RECOMMENDED PREPARATION ELEMENT

Function or Expense	Annual Cost
Present New York City preparation activities	$280,000
Upstate preparation activities	300,000
Handling of book cards, etc. at preparation centers	30,000
Receiving and shelving	190,000
Total	$800,000

DELIVERY

The estimate for the delivery element in the recommended system assumes that the New York City systems will continue to deliver as at present, while the three recommended preparation centers upstate will deliver by mail. Table F-4 shows the various parts of the total estimate.

Table F-4

ESTIMATE FOR RECOMMENDED DELIVERY ELEMENT

Function or Expense	Annual Cost
New York City delivery	$ 20,000
Upstate delivery	
Postage	$ 20,000
Salaries and benefits	60,000
Insurance	10,000
General administration and miscellaneous	20,000
Sub-total upstate delivery	$110,000
Total all delivery costs	$130,000

CATALOG MATERIAL PRODUCTION AND CATALOG MAINTENANCE

Since there was no information on the present cost of producing catalog cards or maintaining card catalogs in Appendix D, this section contrasts the present costs for both activities with the estimated costs for the production of catalog materials and the maintenance of card catalogs under the recommended plan.

The cost of producing catalog cards at present is based on the results of research made for the current study of the processing operations of the three New York City systems, as are the estimates of the new card filing costs for both the present and recommended arrangements. Table F-5 shows these various costs. The catalog production costs for the recommended plan are the total of two estimates: the one made of the production cost of book catalogs (aside from machine time) discussed in Section 2 of Appendix D, and the other for the machine time required for the production of catalog cards and book catalogs under the proposed arrangements.

Table F-5

CATALOG MATERIALS PRODUCTION
AND CARD FILING COSTS

	Recommended	Present
Catalog materials production		
Books	$710, 000	—
Cards	40, 000	$330, 000
Sub-total catalog materials production	$750, 000	$330, 000
Card filing	220, 000	490, 000
Total	$970, 000	$820, 000

It should be remembered that under the recommended system there would be additional savings realized over the present arrangements because there would be much less catalog maintenance required than at present. It is expected that many libraries would discard their card catalogs were the new arrangements adopted. As time passed there would be continually less expense necessary for the removal of catalog cards for deleted titles since the titles deleted would increasingly have been cataloged in the book catalog. It is possible that some libraries would spend less time and money on maintaining their card catalogs, knowing that they would become decreasingly important as time went on. It is difficult to make a definite estimate of these various savings in catalog maintenance due to the many variables involved, but it is believed that within the first few years, for the whole state, they should equal annually about 50% of the total savings expected in card filing costs. This, based on the figures in Table F-5, would be some $135, 000, but this added saving is not included in the calculations because of its speculative nature.

COMPARATIVE OVERALL COSTS

Table F-6 summarizes the comparative costs of the three master sets of figures for the whole statewide processing activity: present arrangements; recommended plan made comparable to the present arrangements; and the recommended plan as it would actually operate.

(table on following page)

Table F-6

COSTS: PRESENT ARRANGEMENTS AND RECOMMENDED PLAN

Function or Expense	Recommended (as it would operate)	Recommended (arranged for comparison)	Present	Saving: Recommended (compared) Over Present
Processing elements				
Acquisition	$ 850,000	$ 790,000	$ 930,000	$ + 140,000
Cataloging	410,000	410,000	1,300,000	+ 890,000
Preparation	800,000	860,000	830,000	— 30,000
Delivery	130,000	130,000	160,000	+ 30,000
Sub-total processing elements	$2,190,000	$2,190,000	$3,220,000	$ + 1,030,000
Catalog materials + filing				
Catalogs - books	$ 710,000	$ 710,000	—	$ — 710,000
- cards	40,000	40,000	330,000	+ 290,000
New card filing	220,000	220,000	490,000	+ 270,000
Sub-total catalog materials + filing	$ 970,000	$ 970,000	$ 820,000	$ — 150,000
Total all functions and expenses	$3,160,000	$3,160,000	$4,040,000	$ + 880,000

Section 2

Capital Costs

In addition to the annual operating costs there will be one-time costs involved in setting up the system. It appears that the largest of these will be data processing installation costs and system design costs. These are summarized in the table below.

Table F-7

ESTIMATED SYSTEM CAPITAL COSTS

Activity	Cost
Equipment installation	$150,000
System design	
EDP personnel professional effort	450,000
Library personnel professional effort	100,000
Total	$700,000

DATA PROCESSING INSTALLATION COSTS

Table F-8 shows the original contract prices by category as well as the total amount finally paid by an organization which recently made an installation similar to the recommended one.

Table F-8

ELECTRONIC DATA EQUIPMENT INSTALLATION COSTS
(Illustrative)

Expense	Cost
Original contract prices	
Heating, ventilating, air-conditioning	$ 46,800
Raised floor	19,400
Electricity	12,600
Partition	9,000
General conditions	3,800
Structural ceilings, fire protection, etc.	17,400
Engineering	12,600
Construction supervisor	3,000
Sub-total original contract prices	$124,600
Additional charges	18,400
Total installation costs	$143,000
Rounded upward for estimating purposes	$150,000

System Design Costs. There are two elements in these costs: those for the EDP personnel who would be involved and those for the personnel of the libraries who would have to help in the development of the systems. The costs for the EDP personnel can be estimated fairly closely; on the basis of available information,those for the library personnel are only rough approximations.

It is expected that it will be about five years from the time system design starts until the system is in full operation in the state. In that time, the first three years will be spent in system design and programming, while the last two years will be used to test the system in an initial region and phase it in in the remaining regions. These two periods within the first years will require different types of personnel. Table F-9 outlines these personnel requirements and estimates their cost.

Title F-9

FIVE-YEAR SYSTEM DESIGN AND PROGRAMMING COSTS

Expense	Cost
First period	
4 system designers for 3 years ($12,000/year)	$144,000
5 programmers for 2 years ($10,000/year)	100,000
Overhead allowance (30% of personnel cost)	73,000
Sub-total first period	$317,000
Second period	
2 system designers for 2 years ($12,000/year)	$ 48,000
2 programmers for 2 years ($10,000/year)	40,000
Overhead allowance (30% of personnel cost)	26,000
Sub-total second period	$114,000
Total both periods	$431,000
Rounded to nearest $50,000	$450,000

In the designing of the system there will probably be an extensive collaboration between professional library personnel representative of the libraries to be served by the system and the system programming staff. It seems likely that a committee or series of committees of library personnel will be formed to work with the system personnel. It also seems reasonable that the expenses of such committees should be considered part of the capital investment necessary for the system. It is possible that some library personnel may have to be assigned full time or give substantial parts of their working hours on a regular basis to the organizing of the system; if this is the case, it would also seem reasonable to consider the salaries of such personnel as a capital expense of the system. It is hard to estimate what the total costs for the library personnel involved would be. A rough estimate of $100,000 has been made, half of it for salaries and half for expenses of the various individuals and committees. It is believed that this amount would be ample for the purpose.